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Moving on after critical incidents in health care. Second victims: A qualitative study of the experiences of nurses and midwives

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This thesis is presented for the degree of
Master of Nursing (Research)

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Abstract

Aims: The aims of this study were to gain a deeper understanding of the experiences of nurses and midwives who have been involved in a critical incident in a non-critical care area and to explore how they have 'moved-on' from the event.

Background: It is irrefutable that health care is intrinsically risk-laden and perceived to be personally and professionally demanding for those who are employed within it. The term 'second victim' has been assigned to health care professionals who experienced emotional distress as a result of their involvement in critical incidents. Despite the recognition that critical incidents contribute to work-related stress, strategies employed by nurses and midwives to move-on from their often traumatic experiences of these events in non-critical care settings were not widely reported.

Research design: An interpretive descriptive design based on the scientific worldview of constructivism guided inductive inquiry to interpret the meaning of moving-on central to nurses and midwives who have lived through the impact of critical incidents.

Methods: Purposive sampling was used to recruit 10 nurses and midwives to participate in the study. Data collection comprised of semi-structured interviews, memos and field notes. Data was concurrently collected and analysed with the data management software NVivo 11, to derive themes and patterns, which enabled the researcher and the study-participants to co-construct knowledge. A thematic analytical method stipulated a coherent analytical framework to evolve the emerging themes and transform the data into credible interpretive description findings.

Findings: The findings revealed five main themes (1) initial emotional and physical response, (2) the aftermath, (3) long-lasting repercussions, (4) workplace support and (5) moving-on. Nurses and midwives experienced intense initial reactions and tumultuous emotions in the aftermath of the event and desired to share their burden. Various unsupportive workplace practices convoluted the

reclamation of their professional competence, whilst adaptive strategies to promote physical and mental well-being enabled the participants to rise above the impact of critical incidents.

Discussion: This study highlighted several issues fundamental to withstand and overcome the personally damaging and professionally destructive challenges associated with critical incidents. The discussion of findings revealed new insights into the significance of support and a generally optimistic outlook derived from a well-adjusted work-life balance. Future research is required to explore the perceived effectiveness of workplace practices, as well as the role of education.

Relevance: This study presented an opportunity to shed light on the perceptions of 'nurse and midwife-second victims' within a range of non-critical care settings. Through their lens, the strategies they engaged in to move-on from the event were identified and their call for organisational and collegial support received a voice.

Conclusion: This study explored how nurses and midwives moved-on following critical incidents in various clinical areas. The identification of adaptive strategies contributed to the existing body of knowledge surrounding this phenomenon. Findings have the potential to inform health care organisations with the aim to support others who experienced critical incidents in health care, as well as guide nursing and midwifery education programs to raise awareness of the potential effects associated with the impact of critical incidents.

Keywords: critical incident, adverse event, clinical incident, nurses, midwives, trauma, coping

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

i. incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;

ii. contain any material previously published or written by another person except where due reference is made in the test of the thesis; or

iii. contain any defamatory material.

Melanie Buhlmann

Master of Nursing (Research) Candidate

Date: 12/03/2019

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Dr Beverley Ewens

Principal Supervisor

Date: 12/03/2019

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Dr Amineh Rashidi

Associate Supervisor

Date: 12/03/2019

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Thank you to all the participants for your generous contribution and for the time you volunteered to not only meet with me for an interview, but also to read and comment on the summative narrative of your story I compiled following our encounter. Thank you for your trust, your honesty and for allowing me to share your stories.

To my wonderful family and friends, especially Gary and my children, my deepest gratitude goes to you, for your kind and generous support and for your understanding when the sacrifices I made to work on this project compromised our time together.

Dedication

This study is dedicated to all nurses and midwives and other health care professionals who experienced the impact of critical incidents in health care. May this study encourage you to find a way to move-on.

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Chapter 1. Introduction

1.1 Chapter overview

The first chapter of this thesis introduces the background and significance of this research project. Health care is intrinsically risk laden (Arfanis & Smith, 2012), giving rise to critical incidents that affect as many as 4.9% of patients (n = 29,671) in Western Australian public hospitals (Patient Safety Surveillance Unit, 2018). Critical incidents are often associated with devastating consequences for all those involved, and yet health care professionals are presumed to be able to cope with the severity and seriousness of these events and return to emotional and cognitive function in readiness for their next shift (Powers, 2015). A systematic review of the literature was undertaken, which revealed a gap in the evidence in relation to the impact of critical incidents on nurses and midwives in non-critical care settings and the adaptive strategies which enabled them to move-on from the aftermath associated with such events. The research aims, the specific research question and objectives of this study are presented within this chapter, with the explicit intention to situate the focus of this study and the contribution to the body of knowledge this study will make. The design features of the study, the methodological approach and the findings are briefly explained, followed by an outline of the thesis to orientate the reader to the chapter structure.

1.2 Preamble

"Imagine carrying a piece of luggage that becomes heavier with every emergency event we have experienced and have been unable to talk about freely with colleagues" (Powers, 2015, p. 1).

Within this preamble I will define the terms pertinent to this study and provide information about critical incidents to illustrate how these pose a threat to the personal and professional well-being of the health care professionals, who are exposed to them.

A critical incident may be defined as “a sudden unexpected event that has an emotional impact sufficient to overwhelm the usually effective coping skills of an individual, and cause significant psychological stress” (de Boer et al., 2011, p. 316). A critical incident may not necessarily stem from catastrophic circumstances, it has been acknowledged that the emotional, physical and professional impact on those involved can occur following any adverse event, clinical error or patient incident (de Boer et al., 2011; Pratt, Kenney, Scott, & Wu, 2012). For this reason, I have used the term ‘critical incident’ throughout as an all-encompassing definition to describe the multitude of incident types and events. The rationale for this is that despite the heterogeneity of critical incidents, the involvement in such events can cause many health care professionals to experience extreme emotional suffering and deeply disturbing perceptions of their personal and professional self-image, which are often associated with long-term emotional sequelae and professional isolation (Clancy, 2012; Kable & Spigelman, 2018).

It has been estimated that up to one in seven health care professionals have been exposed to a critical incident in their careers, and as a result have experienced concerns with professional performance as well as personal issues at some point (Clancy, 2012; Joesten, Cipparrone, Okuno-Jones, & DuBose, 2015; Kable & Spigelman, 2018). Those physicians, nurses, midwives, pharmacists and other members of the health care team left traumatised by critical incidents have been labelled in a seminal work as “second victims” (Wu, 2000, p. 726). According to Wu (2000, p. 726), the first victim in clinical incidents are the patients and their family, whilst the second victims are the staff, who Wu (2000) considered were ‘wounded’ in a comparable way. I have therefore referred to the phrase ‘health care professionals’ as an all-inclusive term to describe the diverse professions employed within health care organisations throughout this thesis. These work-related critical incidents can leave behind a metaphoric “piece of luggage” described by Powers (2015, p. 1), which symbolises a load that is carried by some health care professionals for a life time.

1.3 Background

Critical incidents and the impact they have on patients and their families have been a major issue of concern for health care organisations in recent years (Australian Commission on Safety and Quality in Health Care, 2019). This increased scrutiny has prompted the development of many systems and processes to address the safety of health care delivery and improve quality of care to enable consumers to receive appropriate, evidence-based care without experiencing preventable harm (Australian Commission on Safety and Quality in Health Care, 2019; Kable & Spigelman, 2018). Despite the increased attention to patient safety through organisational wide approaches, critical incidents still occur (Patient Safety Surveillance Unit, 2018). Adverse events have been described as situations where injury or harm was caused to a patient as a result of medical interventions or its consequences, including medication errors, surgical or anaesthetic complications, unexpected death or complications of resuscitation (Department of Health WA, 2015). Although such adverse events or clinical errors have the potential to leave health care professionals as second victims and with significant emotional distress (Pratt et al., 2012), the associated trauma may be equally as strong as those which occur following poor patient outcomes that did not originate from a clinical error or adverse event (Scott et al., 2010).

The second victim phenomenon was supported more recently by Scott et al. (2009), who considered that those health care professionals involved in critical incidents often felt personally responsible for failing the patient. These feelings led them to doubt their knowledge and skills and caused many health care professionals to question their choice of career entirely (Scott et al., 2009). Self-blame, humiliation and feelings of guilt and inadequacy contributed to perceived loss of professional self-worth (Grissinger, 2014; Jones & Treiber, 2012), even if the critical incident was not associated with a clinical error (Pratt et al., 2012).

The impact of critical incidents on work related stress in many health care professions is well documented (Halpern et al., 2012; Keene, Hutton, Hall, & Rushton, 2010; Mealer, Jones, & Moss, 2012), especially as this is incongruent with the ethos

of health care professionals who strive to protect their patients from harm (Arfanis & Smith, 2012). Work related stress can be a significant issue in health care and has been linked to anxiety, depression, Post-Traumatic Stress Disorder (PTSD) and burnout syndrome (Czaja, Moss, & Mealer, 2012; Mishra, Goebert, Char, Dukes, & Ahmed, 2010). Prolonged levels of stress following critical incidents have also been connected to maladaptive behaviours (Healy & Tyrrell, 2013; McCool et al., 2009) such as substance misuse, alcohol dependency and increased risk of suicide (Gazoni, Durieux, & Wells, 2008; Mishra et al., 2010.

Complex sorrow and psychological harm can occur because of incidents that cause patient harm (Grissinger, 2014). Many health care professionals worry what their colleagues might think, have difficulty forgiving themselves and feel abandoned by their health care organisations because they are too ashamed to request emotional support (Edrees & Federico, 2015). In some cases lives fall apart. Others remain haunted throughout their careers and silently endure the consequences of workplace stress as a result of a critical incident during their time of greatest need (Grissinger, 2014). Despite the awareness of the personal, social and professional effects of work related stress, it has been acknowledged that health care organisations fail to provide adequate support mechanisms to address this potential sequelae (Grissinger, 2014; Kable & Spigelman, 2018).

1.4 Statement of the research problem

The profound impact of direct involvement with any type of critical incident, has been well established and cannot be underestimated as a negative influence on professional self-esteem, clinical competence and the capacity to practice within the profession (Jones & Treiber, 2012; Kable & Spigelman, 2018; McLennan et al., 2015; Wu & Steckelberg, 2012). Previous research identified that critical incidents contributed to the stressful environment that affected diverse groups of health care professionals predominantly in intensive care (ICU) or high dependency units (HDU), emergency departments (ED) or ambulance services (Ajri-Khameslou, Abbaszadeh, & Borhani, 2017; Allen & Palk, 2018; Avraham, Goldblatt, & Yafe, 2014; de Boer, van Rikxoort, Bakker, & Smit, 2014; Laurent et al., 2014). However, there is a paucity of

studies that have focused on how nurses and midwives who form the majority of the nursing workforce in non-critical care areas experience the impact of critical incidents and how and if they had moved-on from them.

The aim of my study was therefore to contribute to the existing body of knowledge by gleaning an understanding of nurses' and midwives' experiences and perceptions of critical incidents within non-critical care settings and explore what helped them to move-on from them.

1.5 Research aim and question

1.5.1 Aims of the study

The aims of this study were to explore the experiences of nurses and midwives in non-critical care areas who have been involved in a critical incident, to identify adaptive strategies that have been employed by them in order to move-on, and to explore if exposure to the event influenced their future professional lives.

1.5.2 Research question

What can be learned from the experiences of nurses and midwives who have moved-on after the impact of a critical incident that may be helpful to supporting nurses and midwives undergoing such experiences in the workplace?

1.6 Objectives of the study

The objectives of this study were to:

- Gain an understanding of the experiences of nurses and midwives involved in a critical incident in non-critical care clinical areas;
- Identify adaptive strategies employed by nurses and midwives to move-on past the event;
- Explore the impact of exposure to a critical incident on nurses and midwives' future professional lives;
- Develop recommendations for consideration to inform support strategies for nurses and midwives within a range of practice settings.

1.7 Contribution and significance of the study

It is irrefutable that health care is perceived as a setting that is personally and professionally demanding for those who are employed within it (Mealer et al., 2012b; Theophilos, Magyar, & Babl, 2009). The development of conditions, such as burnout, compassion fatigue and vicarious traumatisation can manifest as a result of being continuously exposed to highly stressful situations in a professional capacity (Halpern, Maunder, Schwartz, & Gurevich, 2011; Healy & Tyrrell, 2013; Lewis, Baernholdt, Yan, & Guterbock, 2015). Reactions related to the stress associated with a critical incident are known to persist past the time of the event (Halpern et al., 2011; Kable & Spigelman, 2018), further adding to the already taxing working environment that contributes to staff attrition (Scott et al., 2009). This potentially may impact on the quality of patient care as a result of emotional distancing from patients (Lewis et al., 2015). According to the Australian Department of Health (2013), professional burnout and work related stress are amongst the most complex and influencing factors on the retention and attrition of nurses and midwives. There is currently a global shortage of health care professionals within the workforce, particularly nurses and midwives (WHO, 2016). Nurses and midwives are critical in the delivery of health care and represent 20.7 million, equating to 50% of the international health workforce (WHO, 2016). The WHO published a Global Strategic Direction Statement in 2016 to address the nursing and midwifery shortages which have been estimated by the year 2030, will reach 7.6 million (WHO, 2016). In Australia, workforce planning projections show that without ongoing retention, the demand for nurses will significantly exceed the supply, with a projected shortfall of approximately 85,000 nurses by the year 2025 and 123,000 nurses by 2030 (Health Workforce Australia, 2014). Similarly, midwifery retention and attrition has been described as a growing concern for health care organisations locally as well as internationally (Bloxsome, Ireson, Doleman, & Bayes, 2019). Understanding the emotional and professional toll second victims endure and exploring the support they require to maintain their clinical roles, could be one aspect to counteract the work-stress related attrition in nursing and midwifery, and thus promote retention and reduce the projected

shortfall of nurses and midwives (Grissinger, 2014; Health Workforce Australia, 2014; WHO, 2016).

Despite the widespread recognition of the impact that critical incidents can have on health care professionals, there is a dearth of studies that have investigated the strategies utilised by nurses and midwives employed in non-critical care settings, to manage the intense reactions associated with the exposure, or how future professional experiences have been influenced by the involvement in the critical event. In order to implement appropriate strategies that attend to the unique requirements of second victims, mitigate the enduring professional impact and retain them in the workforce, it is important to explore their experiences so that health care organisations, managers and potentially other health care professionals themselves better understand how to support those individuals involved.

The contemporary literature, which has reported on the need for support of second victims, was mainly derived from research that focused on specific health care professions, such as physicians and ambulance personnel, or included a combination of diverse health care professionals primarily employed in ICU/HDU or ED (Kable & Spigelman, 2018; Rinaldi, Leigheb, Vanhaecht, Donnarumma, & Panella, 2016; Rodriquez & Scott, 2018; Scott et al., 2009). Paramount within the second victim research was the notion of allowing second victims to share their stories and to be heard, in order to reduce their emotional burden and receive professional reassurance (McLennan et al., 2015; Mishra, Goebert, Char, Dukes, & Ahmed, 2010; Scott et al., 2009). Although these studies explored the significant impact of critical incidents, only some described the path to recovery and shared the measures second victims had applied in order to thrive and continue their professional practice in the clinical setting (Rinaldi et al., 2016; Rodriquez & Scott, 2018; Scott et al., 2009; Scott & McCoig, 2016; Ullström, Andreen Sachs, Hansson, Ovretveit, & Brommels, 2014). A rigorous search and critical synthesis of the literature in my study did not reveal publications which specifically explored the strategies utilised by nurses and midwives in non-critical care areas, to move-on from critical incidents, and how their future professional lives may have been influenced by their experiences.

To address this gap in the literature, my study focused on revealing the successful strategies employed by nurses and midwives who were able to move-on and continue to thrive, both personally and professionally, as a consequence of their experiences. Illuminating these strategies and the insights gained from the second victims who participated in my study, could be a valuable source of support for others who have been involved in similar events.

Fostering and promoting a workplace culture that is receptive to the needs of second victims and actively supports their personal and professional recovery after critical incidents is an important component of this. The WHO projects that the proportion of the world's population aged 60 and over will nearly double from 12% to 22% by the year 2050 (WHO, 2016). The demands on health care associated with this shift combined with the projected global shortfall of 7.6 million nurses and midwives by the year 2030, makes the retention of nurses and midwives in the workforce even more imperative (WHO, 2016). Therefore, studies such as this one, can play an important part in sharing strategies which can maintain the health and wellbeing of our workforce.

The finding from my study are not only relevant to health care organisations but also to nursing and midwifery education programs. The insights shared by the participants may help to prepare future health care professionals for the potential impact of critical incidents and normalise the acceptance of assistance and support following such events in order to move-on.

1.8 Design and methodology in brief

The methodology of interpretive description strengthened the design of this study and enabled me to derive and interpret themes and patterns from the experiences of the participants (Thorne, 2016). Interpretive description honours an inductive style of qualitative research consistent with the scientific worldview based on a constructivist paradigm (Creswell, 2014). Philosophical, ontological and epistemological stances underpinned the choice of this methodology, to construct meaning, rather than discover it (Crotty, 1998). While interpretive description

permitted flexibility in design variations because it integrates elements of theoretically driven traditional approaches, such as phenomenology, ethnography and grounded theory, it also enabled the integrity and coherence of a defensible approach to interpret the experiences of nurses and midwives within their own reality. As a guiding methodology, interpretive description enabled explicit attention to the value of subjective and experiential knowledge and acknowledged that the human world is constructed of multiple realities (Thorne, 2016), synergistic with the nature of my enquiry and the knowledge I was intending to generate. Applying this rigorous, yet non-prescriptive methodology, determined the processes of participant sampling and recruitment, data collection and analysis. Conducting face-to-face interviews with the participants allowed me to explore the uniqueness of their experiences through their individual lens and to reveal the diverse and complex cohesions that existed within their lives. Interpretive description methodology further enhanced the credibility and trustworthiness of this study by enabling me to generate findings that remained connected to the situation, the time and context from which they originated (Thorne, 2016).

1.9 Findings in brief

The findings which have emerged from this study addressed the overarching aim to gain a deeper understanding of the experiences of critical incidents encountered by nurses and midwives in non-critical care settings. The impact the incidents had on the participants was revealed as several short and long-term effects manifested, ranging from initial emotional and physical responses to long lasting repercussions. Various unsupportive workplace behaviours and practices convoluted the restoration of personal and professional integrity, which contributed to a culture of mistaken anticipation that nurses and midwives naturally coped with the incidents they were involved in. Several adaptive strategies employed by the participants to move-on from their experiences came to light as beneficial measures of the post-event recuperation process. As a result of the collaboration between the participants and myself, five main themes emerged from the analysis of the interviews: (1) Initial emotional and physical response, (2) the aftermath, (3) long-lasting repercussions,

(4) workplace support and (5) moving-on. In summary, the study findings yielded crucial insights, which have the potential to inform support mechanisms to enable other health care professionals to effectively move-on from their involvement in critical incidents and productively maintain their professional roles in the workforce.

1.10 Outline of the thesis

This thesis comprises seven chapters. The current chapter (1) provides a brief overview of the study to set the scene and to situate the reader within the topic and structure of this project. Chapter two (2) presents the systematic review of the literature surrounding the impact of critical incidents on nurses and midwives and identifies a distinct gap, which provided a justification for this study. A detailed clarification of the research design and methodology is outlined in chapter three (3), specifying the analytic logic involved in the development of a sound interpretive description study. The participants and their unique experiences are profiled in chapter four (4) to bring their individual stories to life and give meaning to the findings presented in the succeeding chapter five (5), which offers the generated results stemming from the analysis of the interviews. A rigorous discussion and deliberation of the findings are presented in chapter six (6), followed by a conclusive summary, including recommendations and limitations arising from the study offered in the final chapter seven (7).

1.11 Chapter summary

This first chapter has presented an introduction to the background surrounding the impact of critical incidents on health care professionals employed within health care organisations as well as presenting a detailed structure of this thesis. An important component of successful retention strategies is to promote the personal and professional well-being of nurses and midwives and enable their capacity to deliver quality care, in preparation for the projected growth and shift in the population's proportions and the predictions of shortages in the nursing and midwifery workforce. An exploration of the risks to and potential effects on the personal and professional well-being associated with the involvement in such events,

as well as the perceived needs and adaptive strategies to move-on and maintain the professional confidence to practice afterwards, was justified.

To answer the research question and address the aims and objectives of this study, I applied the methodology of interpretive description to derive and interpret themes and patterns from the unique experiences the participants divulged during their interviews. This study was significant because it provided an understanding of the experiences and perceptions of nurses and midwives employed in non-critical care settings following involvement in critical incidents, and the strategies they employed in order to move-on from them. The insights gained from this study formed implications for practice and recommendations for consideration for health care organisations and their managers, as well as nursing and midwifery education programs and potentially other health care professionals. The findings of my study draw attention to the need to prepare health care professionals for the potential impact of critical incidents, as well as to strengthen the design and implementation of support services that restore the professional confidence fundamental to their ability to remain in the workforce after such events. In the following chapter two, I present a systematic review of the literature, which reveals my transparent search strategy and rigorous synthesis processes which illuminates the distinct gap in the current literature, which steered the development of my study.

Chapter 2. Systematic Review

2.1 Introduction

Chapter two presents a critical review and synthesis of the existing literature, which focuses on the impact of critical incidents on nurses and midwives. Many health care professionals, including nurses and midwives, have described their involvement in critical incidents as the “darkest hour” of their professional careers (Scott et al., 2009, p. 328). As such, incidents have the potential to leave heath care professionals in significant distress, and termed the second victims of critical incidents, which drew attention to their needs and inspired international exploration of the phenomenon (Wu, 2000). Chapter two reveals the explicit and transparent search strategy which identified the research, including the inclusion and exclusion criteria, which strengthened the rigour of this review (Booth, Sutton, & Papaioannou, 2016). The design follows the methodological framework of a systematic review developed by the Joanna Briggs Institute (JBI, 2018). This ensured all eligible sources were identified and critically analysed as well as synthesised to capture important patterns and themes (Booth et al., 2016). A discussion of the findings, including the limitation of the included studies, revealed a distinct gap in the current literature, which drove the development of my study.

2.2 Aim

The aim of this systematic review was to examine the relevant international research in order to develop an understanding of the impact on nurses and midwives associated with the involvement in critical incidents. This systematic approach enabled me to synthesise the available research with the intention to highlight gaps in the existing knowledge to inform the development of my project (Robertson-Malt, 2014). The objective of this review was to: Explore how nurses and midwives moved-on from their experiences arising from the impact of critical incidents.

2.3 Methods

A six-step process was utilised to enable a transparent approach to identify, appraise and synthesise the relevant literature for this review (Aromataris & Pearson, 2014; Aromataris & Riitano, 2014; Munn, Tufanaru, & Aromataris, 2014; Porritt, Gomersall, & Lockwood, 2014; Robertson-Malt, 2014; Stern, Jordan, & McArthur, 2014). This process facilitated the development of a specific review question, inclusion and exclusion criteria, a comprehensive search, critical appraisal, data analysis and final presentation of findings (Aromataris & Pearson, 2014). The steps employed for the methodological approach of this systematic review are outlined below.

2.4 Step 1 – Development of the review question

To commence the systematic review of the literature, a specific review question was constructed, which incorporated the four elements of the ***P****opulation, phenomenon of* ***I****nterest,* ***Co****ntext* and ***S****tudy* design (PICoS) method (Stern et al., 2014). The PICoS process was typically applied to qualitative research of human experience and was therefore appropriate to guide this study and form the basis for the development of my search strategy (Stern et al., 2014). The following review question incorporated the four PICoS criteria: ***What are nurses' and midwives' ("P") experiences and perceptions ("I") of critical incidents ("Co") depicted in qualitative research ("S")?***

2.5 Step 2 – Development of inclusion and exclusion criteria

The development of precise inclusion and exclusion criteria added to the rigour and enabled the replicability of this review (Stern et al., 2014).

2.5.1 Inclusion criteria

The inclusion criteria comprised:

- primary qualitative research studies

- studies which focussed on moving-on after critical incidents, adverse events and errors;
- nurses and midwives employed in health care;
- studies published in English;
- studies published within the preceding five years.

The time period of five years was established to ensure the contemporaneous nature of the published literature.

2.5.2 Exclusion criteria

- Studies were excluded that focused on safety and quality systems and processes, such as the cause, prevention or reporting of an incident, without evaluating the impact on the nurse or midwife involved were excluded from this review during the initial title-screening phase.
- Studies that concentrated on professions other than nurses and midwives were also excluded from the systematic review.

2.6 Step 3 – Construction of search strategy

A specific search strategy was constructed to identify pertinent literature, while excluding irrelevant studies (Aromataris & Riitano, 2014). To achieve this, the review protocol was based on the key terms derived from the review question and the inclusion criteria as presented in Table 2-1. The search strategy therefore intrinsically related to the development of the review question, as well as the inclusion and exclusion criteria and featured the broad and systematic searching of electronic databases. Manual search strategies included the searching of core authors and journals identified in the literature, as well as scanning the reference trails of selected studies and scoping unpublished material (Souza, Silva, & Carvalho, 2010).

Table 2-1 – Initial logic grid of key terms aligned with the PICoS elements of the review question

PICoS	Population ("P")	Phenomenon of Interest ("I")	Context ("Co")	Study design ("S")
Key terms	nurses and midwives	experiences and perceptions	critical incidents	qualitative

Stemming from the key terms demonstrated in Table 2-1, alternative keywords were identified within the literature by conducting a test search of the core databases CINAHL, MEDLINE and PsycINFO, before conducting a comprehensive literature search between the 13th October to the 31st October 2018. Titles and abstracts were scanned for synonyms, related phrases and alternate spelling of the main concepts. The controlled vocabulary of each of the bibliographic core and supplemental databases was then explored separately to determine index terms pertinent to the search. Additionally to the core databases CINAHL, MEDLINE and PsycINFO, the supplemental databases PubMed, Embase and Nursing and Allied Health (ProQuest) were systematically searched. All searches incorporated the key terms and associated keywords as well as the relevant index terms, which were italicised and labelled on the logic grids with *[MH]* to specify Medical Subject Headings (MeSH) or Subject Terms contained within each of the relevant databases. Appendix A contains the comprehensive logic grids for all databases searched for this review. Inverted commas were applied to phrases and other terms were truncated (*) to allow for alternative word forms or spelling as well as plurals. All search terms were tested several times to ensure that relevant literature was identified. Boolean operators 'AND' and 'OR' were applied to either expand or narrow the search and ensure all potentially relevant articles were contained within the results. The search strings which comprised the key words are also included in Appendix A.

Through the exploration of the core and supplemental databases, I identified specific journals and hand searched the likelihood they contained further relevant studies published within the past five years. I accessed the following journals via the database Ulrich's Web and explored each of them with the key terms 'incident', 'error' and 'adverse event': Journal of Clinical Nursing, International Journal for Quality in Health Care, Quality Management in Health Care and Journal of Nursing Care Quality. I further hand searched the reference lists of studies identified for inclusion in the review; no articles met the inclusion criteria. In addition to these processes, I identified the significant authors in the literature and searched the database Scopus for any further publications (Table 2-2). Despite finding another 50

publications, after screening the titles, abstracts and year of publication, only two full text articles were assessed but did not met my inclusion criteria.

Table 2-2 – Scopus citation searching: Significant Authors

Significant Authors				
Author	Documents identified	After limiters, title & abstract screening	Full text screened	Met inclusion criteria
De Boer, Jacoba	7	1	0	0
Kable, Ashley	18	2	1	0
Khong, Betty	4	1	0	0
Ullstom, Susanne	3	0	0	0
Scott, Susan D.	19	4	1	0
Total	51	8	2	0

To broaden my comprehensive search, I examined the grey literature as an adjunct to published research to minimise publication bias and provide a thorough account of the available evidence (Aromataris & Riitano, 2014). As summarised in Table 2-3, I explored websites of organisations relevant to my review question, such as the Australian Commission for Safety and Quality in Health Care, the Australian Government Department of Health, the Australian Nursing and Midwifery Board and the Australian Institute of Health and Welfare. I browsed all websites with the key terms 'critical incident', 'adverse event' and 'medical error', but did not identify any publications that met the inclusion criteria.

Table 2-3 – Grey literature searching

Grey Literature				
	Documents identified and titles screened	Abstract screening	Full text screened	Met inclusion criteria
Websites	0	0	0	0
Grey databases	127	0	0	0
Theses & dissertations	305	3	1	0
Google Scholar	500 (17700)	6	0	0
Total	932	9	1	0

In addition, I searched databases that collate and index grey literature, including OpenGrey, Grey Literature Report, Clinical Trials of the United States (US) National Library of Medicine and the International Clinical Trials Registry Platform of the World Health Organisation (ICTRP) and Grey Matters. Although I identified 932 potentially relevant records, none of them met the inclusion criteria. I examined the University' Research Online repositories as well as ProQuest Dissertations and Theses Global Database for any previous theses that related to my PICoS. Of the 305 identified records, only three were relevant to my review question, but did not meet the inclusion criteria. Searching Google Scholar from 2013 to 2018 with the search string 'nurse OR midwife AND "adverse event" OR "medical error" OR "critical incident"' yielded 17,700 hits. After scanning the first 500 titles, the relevancy of publications diminished. I identified 22 potential records, removed five duplicates, scanned six abstracts and did not find any further publications that met the inclusion criteria. Further details related to my manual searching strategy can be located in Appendix B. At the end of October 2018, I concluded the systematic search of the literature.

2.7 Step 4 – Study Selection and critical appraisal

As reproducibility is a hallmark of a quality review, I reported the search strategy comprehensively according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (2015). To support the transparency of the study selection (Aromataris & Riitano, 2014), Figure 2-1 illustrates the results in the PRISMA flow diagram (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). I identified 7,520 potential publications and exported the results to the bibliographic management software EndNote for removal of duplicate citations and commencement of the study selection (Aromataris & Riitano, 2014). Following the elimination of 3,112 duplications, I screened 4408 titles and 174 abstracts to exclude papers which did not relate sufficiently to my PICoS. Where it was unclear from the title and the abstract whether the article was relevant to the phenomenon stated in my review question, I considered the full text of the study (Porritt et al., 2014). I

assessed 54 full-text articles and further reduced the number of publications which did either not meet the inclusion criteria or reported on issues that related to the exclusion criteria (Porritt et al., 2014).

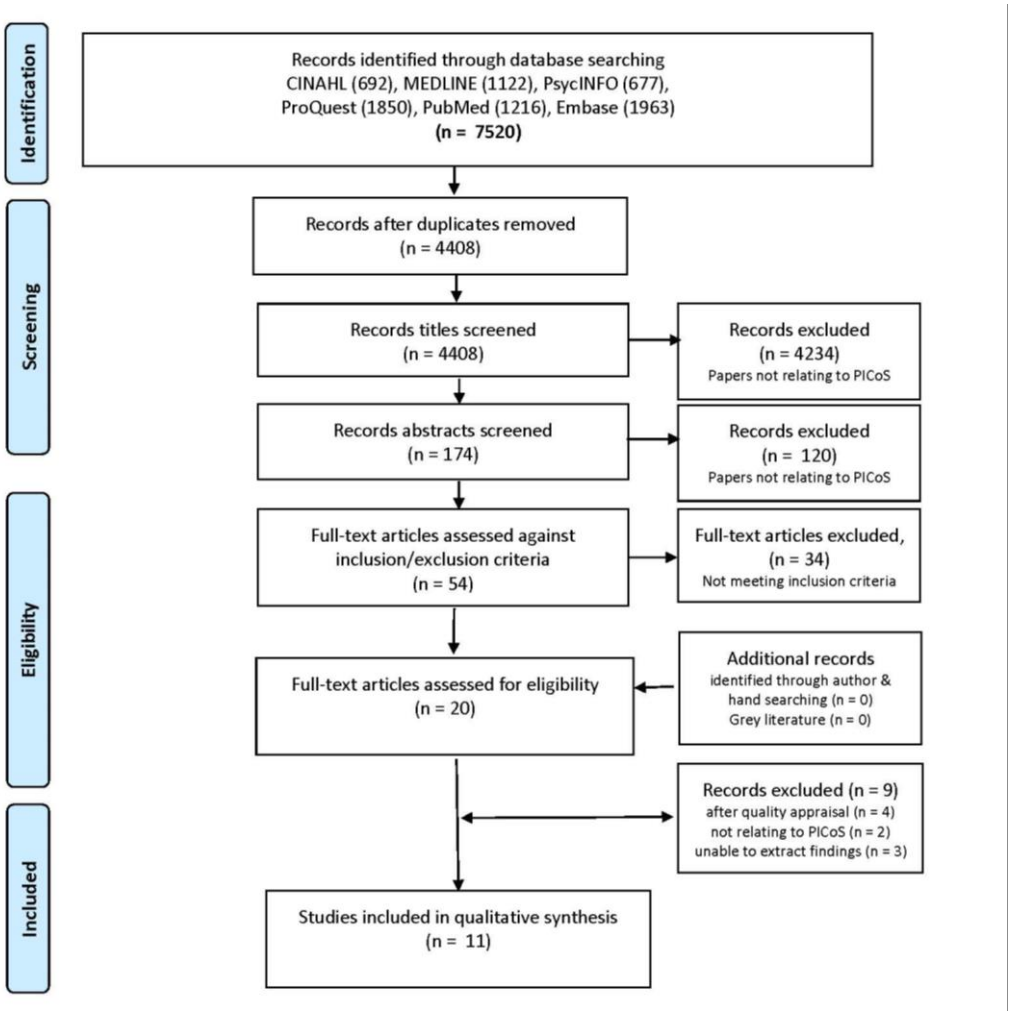

Figure 2-1 – PRISMA flow diagram

Twenty selected studies were subjected to a critical appraisal to exclude those that were of inferior quality and to identify the strength and limitations of those included in the review (Porritt et al., 2014). Because the methods for establishing credibility of qualitative studies are highly contentious, the standardised JBI SUMARI instrument for the Critical Appraisal of Qualitative Evidence (Joanna Briggs Institute, 2018) was used to assess the congruity between the philosophical perspectives of each study and the methods applied to conduct the research. The JBI SUMARI instrument evaluated the primary research papers against the 10 criteria listed in Table 2-4 – JBI critical appraisal instrument (2018)Table 2-4 below.

Table 2-4 – JBI critical appraisal instrument (2018)

Quality criteria in the assessment of original research papers
1. There is congruity between the stated philosophical perspective and the research methodology.
2. There is congruity between the research methodology and the research questions or objectives.
3. There is congruity between the research methodology and the methods used to collect data.
4. There is congruity between the research methodology and the representation and analysis of data.
5. There is congruity between the research methodology and the interpretation of results.
6. There is a statement locating the researcher culturally or theoretically.
7. The influence of the researcher on the research, and vice-versa, is addressed.
8. Participants, and their voices, are adequately represented.
9. The research is ethical according to current criteria, or, there is evidence of ethical approval by an appropriate body
10. Conclusions drawn in the research report do appear to flow from the analysis, or interpretation, of the data.

None of the twenty included studies met all of the applied quality appraisal criteria because none of the papers clearly located the researcher culturally or theoretically (criterion 6), nor sufficiently addressed the influence of the researcher on the research and vice-versa (criterion 7), as illustrated in Appendix C.

Additionally, criterion 1, the congruity between the stated philosophical perspective and the research methodology, was unclear in four of the papers (Cauldwell, Chappell, Murtagh, & Bewley, 2015; Clark & McLean, 2018; de Boer et al., 2014; Ferrús, Silvestre, Olivera, & Mira, 2016). However, only Ferrús et al. (2016) also presented indistinct congruity between the research methodology and the representation and analysis of data (criterion 4) and was therefore excluded after only meeting six of the 10 criteria. I also excluded the study by Ullström and colleagues (Ullström et al., 2014), because the participants and their voices were not adequately represented, nor was the evidence of ethical approval clarified. Similarly, Mayer and Hamilton's paper (2018) did not mention an ethical approval strategy and failed to clearly define the congruity between the research methodology and the research question.

To increase the merit of the final selection of studies for this review, my research supervisors Dr Beverley Ewens and Dr Amineh Rashidi also appraised each study independently. Following the close examination of any discrepancies, the decision was made to further exclude the study by Matandela and Matlakala (2016), because the research methodology was not detailed enough, the data analysis was

vague and the congruity between the research methodology and the interpretation of the result was overall weak. On recommendation of my research supervisors, two further studies were excluded at this point (Ndikwetepo & Strumpher, 2017; Sato, 2015), not because of inadequate quality, but rather because it was identified that they did not sufficiently address the PICoS of this review. After rigorous discussion of the quality appraisal results, 14 studies progressed to the qualitative data extraction and synthesis phase.

2.8 Step 5 – Data extraction and synthesis

To extend beyond the characteristics of a subjective and narrative reporting structure attributed to a traditional literature review, I extracted, combined and synthesised the data from the included studies (Munn et al., 2014). Although I included 14 studies following the quality appraisal, on my second more attentive review of the findings, I realised that the results of three articles could not be extracted. Whilst these studies appeared to have sufficiently addressed the PICoS of this review at first sight because they included nurses or midwives in their sample, they also incorporated additional professional groups, such as doctors, physicians, consultants, chaplains and other health care professionals. It was impossible to distinguish the participant responses amongst the professional groups included in the respective sample of the studies (Cauldwell et al., 2015; Laurent et al., 2014; Rinaldi et al., 2016). As I tried to extract the descriptive data relevant to the review question with the use of the data extraction instrument of JBI SUMARI (2018), I decided to exclude those three papers because the findings specific to nursing or midwifery could not be extracted without making assumptions about their contribution to the themes.

To assemble the findings from the final 11 qualitative research papers, I progressed to a meta-synthesis by meta-aggregation (Munn et al., 2014). Meta-aggregation is the JBI model for the synthesis of qualitative data (Munn et al., 2014), which enabled me to explicitly focus on the complexity of the phenomena in question as well as to identify gaps in the literature. I approached the meta-aggregation by extracting the themes and sub-themes from each of the 11 included study findings,

supported by illustrations of participants' quotations. I assigned each theme or sub-theme one of the three levels of evidence: 'unequivocal', 'credible' or 'not supported' (Joanna Briggs Institute, 2018). Assigning a level of evidence enabled me to evaluate the trustworthiness of the included study findings (Hannes, Petry, & Heyvaert, 2018). Those themes and sub-themes strengthened by illustrations from the participants beyond reasonable doubt were defined as 'unequivocal', whilst statements supported by citations that were open to interpretation were labelled 'credible' (Joanna Briggs Institute, 2018). Themes that were 'not supported' were extracted to provide context and background for the findings overall, however, they were not included in the synthesis. A total of 179 extracted themes and sub-themes were then categorised into nine identified groups according to their similarity in meaning (Hannes et al., 2018): (a) emotional impact, (b) physical impact, (c) professional impact, (d) personal and peer support, (e) culture of workplace support, (f) value of debriefing, (g) living with the impact, (h) post-incident growth and (i) coping with the impact. I cross-compared the content of the papers to identify thematically or conceptually related commonalities. Figure 2-2 demonstrated how these nine categories were aggregated into synthesised, representative statements, which supported the results of my review (Munn et al., 2014).

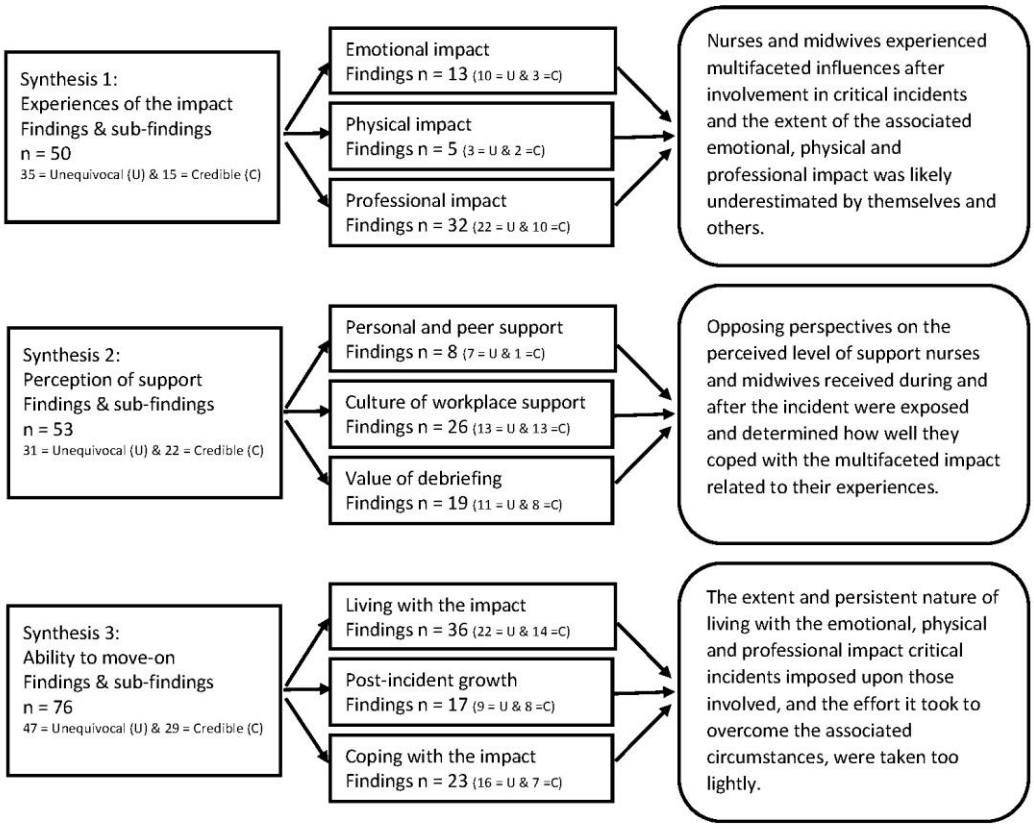

Figure 2-2 – Aggregation into categories and synthesised statements

2.9 Step 6 – Presentation and interpretation of findings/results

The core purpose of the aggregated synthesised statements was to address the review question of this systematic review. I intended to explore what was known about the experiences and perceptions nurses and midwives encountered when they were involved in critical incidents, which enabled me to recommend specific gaps to be investigated in more depth. I developed three synthesised statements addressing three different aspects within the context of critical incidents: the experiences of the impact, the perceptions of support and the ability to move-on.

2.9.1 Review findings

The 179 findings and sub-findings of this review were derived from the analysed interviews with 167 nurses (including 10 nurse practitioners) and 51 midwives in 11 qualitative studies published between 2013-2018. The majority of the participants were female who worked in ICU/HDU, ED, acute care or maternity settings. Other much less represented clinical areas included a stroke and neurology ward, an oncology unit and one operating theatre. Of the 11 studies, two were conducted in Australia (Allen & Palk, 2018; Kable, Kelly, & Adams, 2018), two in Iran (Ajri-Khameslou et al., 2017; Mohsenpour, Hosseini, Abbaszadeh, Shahboulaghi, & Khankeh, 2018) two in in the United States of America (USA) (Delacroix, 2017; Thornton Bacon, 2017), another two in England (Clark & McLean, 2018; Sheen, Spiby, & Slade, 2016), one in the Netherlands (de Boer et al., 2014), Singapore (Chan, Khong, Pei Lin Tan, He, & Wang, 2018) and New Zealand (Calvert & Benn, 2015). The characteristics of the studies are summarised in the search summary table of Appendix D.

2.9.2 Meta-aggregation

Synthesised finding 1 – Experiences of the impact: Nurses and midwives experienced multifaceted influences after involvement in critical incidents and the extent of the associated emotional, physical and professional impact was likely underestimated by themselves and others. This synthesised statement stemmed from 50 findings and sub-findings aggregated in three categories. The experiences of critical incidents had a significant emotional cost including, shame, guilt and devastation and was often accompanied by physical symptoms of stress, shock and visible trembling. Their distress was further amplified by the concern for the patient and the potential damage to their professional confidence, image and reputation.

Category 1 – Emotional impact (n = 13 findings and sub-findings): Nurses and midwives found themselves immersed in a ‘‘world of worry’’ (Mohsenpour et al., 2018, p. 657). Overwhelmed by negative emotional reactions associated with the impact of critical incidents, nurses and midwives were distraught and expressed feelings of powerlessness, profound sadness and loss of self-esteem: “I was

overwhelmed by emotions . . . tears were in my eyes" (de Boer et al., 2014, p. 169). Shame, guilt, anger, regret, remorse and blame fuelled the emotional turmoil (Chan et al., 2018; de Boer et al., 2014; Mohsenpour et al., 2018; Sheen et al., 2016): "I had very strong feelings of guilt towards his wife" (de Boer et al., 2014, p. 170). A powerful initial emotional upset was reported by nurses and midwives who were involved in severe, unexpected critical incidents (Allen & Palk, 2018; Sheen et al., 2016): ''It's a sense of disbelief. It's so horrific that it's too big for your head. Almost too big for your brain to grasp and of course there's the human side of you that's witnessing this awful tragedy and then there's the professional side where you have a role. You know you can't crumble'' (Sheen et al., 2016, p. 66).

Self-blame and guilt led nurses and midwives to question their practice after the event and gave rise to self-doubt (Chan et al., 2018; Mohsenpour et al., 2018; Sheen et al., 2016): "I put added stress on myself by beating myself up about the fact that I could have done something about it? That was the overwhelming feeling of what could I have done differently" (Sheen et al., 2016, p. 66). They also felt vulnerable to investigative procedures and judgements that were taking place and were unsure what would happen to them next (Mohsenpour et al., 2018; Sheen et al., 2016): "I was absolutely devastated. Absolutely, I broke down, I was sobbing and I just thought I'd done nothing to hurt this person, this mum, nothing at all. I went to the funeral because she wanted me to go to the funeral and all they've done is. . . I feel like I'm being punished" (Sheen et al., 2016, p. 67).

Although they attempted to process the details of their experience and make sense of what happened, the emotional distress had the potential to linger (Allen & Palk, 2018; de Boer et al., 2014; Sheen et al., 2016): "Oh it – I was very upset actually. Just couldn't get her out of my mind. It was constantly on my mind and then you know the day that I was told that she'd died was very, very sad" (Sheen et al., 2016, p. 66). Thoughts about the incident remained emotionally charged: "I was shocked… I cried for a few days at home and whenever staff talked to me about the incident. I still tear up/cry if discussing this" (Allen & Palk, 2018, p. 152).

Emotional reactions intensified when the nurse felt a special relationship or identified with the patient's circumstances (Allen & Palk, 2018; de Boer et al., 2014): "This woman was going to die and her daughter was so sad… that intense sadness… suddenly it occurred to me that I could be the one sitting there" (de Boer et al., 2014, p. 169). Further, some of the participants felt concern for patients, families, and colleagues: "I do feel, you know, for the family and that sort of thing and… how they are going to cope… afterwards and hope that, you know, that everything works out okay for them, especially with trauma and loss of a child" (Kable et al., 2018, p. 241). On the other hand, if the harmful impact to the patient was minimal, they experienced a sense of relief, which reduced their initial emotional distress: "... the blood sugar and 6-hourly monitoring didn't show any adverse changes to the blood sugar level, thankfully" (Chan et al., 2018, p. 167). Several nurses described a mixture of both emotional and physical reactions: "This particular event I felt very effected by, when I was taken out of the room I was shaking and so angry that I began to cry..." (Allen & Palk, 2018, p. 152).

Category 2 – Physical impact (n = 5 findings and sub-findings): Apart from the emotional response, nurses and midwives also reported physical reactions associated with the impact of critical incidents. Some experienced a paralysing sense of doom and panic, which manifested itself in physical reactions such as feeling "sick to my stomach" and "difficulty breathing" (Delacroix, 2017, p. 406). Many participants felt symptoms associated with stress, such as feeling sick, hot, tachycardia, sweating and trembling (Allen & Palk, 2018; de Boer et al., 2014; Delacroix, 2017; Mohsenpour et al., 2018): "It affected me a lot… I started shaking from stress" (de Boer et al., 2014, p. 169).

The physical response had the potential to continue following the event (Allen & Palk, 2018; Chan et al., 2018; Delacroix, 2017; Mohsenpour et al., 2018): "I was shaky and heart racing, was a bit unsteady for the rest of the day" (Allen & Palk, 2018, p. 152). Resulting from the physical stress response, their thinking and reactions in the acute period following the error occurrence were impaired: "It seemed that I was dead at the same time as the patient. My whole body was numb. I was pale and confounded" (Mohsenpour et al., 2018, p. 657). Others reported

hyper-vigilance, flash-backs and insomnia, due to recurring thoughts of the incident and the provoking re-evaluation of their clinical competence (Ajri-Khameslou et al., 2017; Chan et al., 2018; Delacroix, 2017): “I couldn’t sleep. I mean I couldn’t sleep. I had bad insomnia, and then if I did manage to fall asleep, I had nightmares about it, where oh it’s my subconscious telling me, you screwed up girl, you should’ve not done this” (Delacroix, 2017, p. 406).

Category 3 – Professional impact (n = 32 findings and sub-findings): Nurses and midwives reported many destructive professional implications associated with the impact of critical incidents. It was irrefutable, that nurses and midwives were exposed to sudden, unpredictable and potentially traumatic events at work (de Boer et al., 2014; Kable et al., 2018; Sheen et al., 2016): “You know, you can get help in but when it is unexpected and everything’s been so low risk and low key and then it goes from joy to utter trauma and devastation in the flick of a coin” (Sheen et al., 2016, p. 64). Incidents were perceived as professionally most challenging, in the participants’ opinion, when they were avoidable or preventable; including when the patient’s condition was misjudged, substandard care was administered or resuscitations that caused significant pressure on health care professionals and ended in the death of a patient (Allen & Palk, 2018; de Boer et al., 2014; Delacroix, 2017; Kable et al., 2018): “I should have insisted they go home by ambulance rather than in their own car (the patient died on his way home)” (de Boer et al., 2014, p. 169).

After an incident, the participants often felt primacy of responsibly, they became self-conscious and held themselves fully accountable for the situation (Ajri-Khameslou et al., 2017; Delacroix, 2017; Kable et al., 2018; Mohsenpour et al., 2018): “The situation would’ve happened regardless of who started that medication, but that doesn’t change how you feel about it. You still feel responsible for your patient. You want to feel like you did the right thing for that patient, that is your patient. Yes, I felt like it was my fault, I felt like I had caused that patient harm, that I had done something wrong” (Delacroix, 2017, p. 405).

Although responding professionally at first: “At that moment, you act and have adequate reactions” (de Boer et al., 2014, p. 169), behavioural and cognitive

consequences followed and threatened their sense of self-identity as professionals: “I felt incompetent. Maybe I felt like I had caused that patient harm, that I had done something wrong” (Delacroix, 2017, p. 405). This threat contributed to a general loss of confidence in their clinical competence (Ajri-Khameslou et al., 2017; Calvert & Benn, 2015; Chan et al., 2018; Delacroix, 2017; Kable et al., 2018; Mohsenpour et al., 2018): “Following that [error], I suffered from having a low self-confidence in doing my tasks. [Even now] I am unable to insert a catheter” (Ajri-Khameslou et al., 2017, p. 71).

The fear of the consequences of the incident or the dread of making another error was pointed out as professionally confronting (Ajri-Khameslou et al., 2017; Delacroix, 2017; Mohsenpour et al., 2018): “Since it was my first experience [making an error], it was stressful for me. I would never forget it. My mind always was engaged with this question that how can I protect patients from error? And what was right and what was wrong for avoiding [further] harm to patients?” (Ajri-Khameslou et al., 2017, p. 71). Their professional future became uncertain and many feared investigative or disciplinary actions (Ajri-Khameslou et al., 2017; Delacroix, 2017): “One time, in the emergency room, when I made a mistake, I was immensely afraid that I get sued by patients that I became so frustrated and hopeless. At that time, I felt that I could lose my job” (Ajri-Khameslou et al., 2017, p. 72).

Many nurses and midwives consciously managed and maintained a professional facade despite their own grief and insecurity (Allen & Palk, 2018; de Boer et al., 2014; Sheen et al., 2016): “You have to maintain an air of professionalism when you’re at work [. . .] I’m not saying you should never well up in front of a parent but actually your responsibility is to look after them not make them feel any worse than they feel already. So I think you hold it in all the time you’re at work” (Sheen et al., 2016, p. 66). Although they acted professionally, some avoided comparable situations, distanced themselves and became either extra attentive or reacted distantly in their continued practice (Ajri-Khameslou et al., 2017; de Boer et al., 2014): “…when it happens frequently I sometimes feel the need to choose ‘risk-free’ patients” (de Boer et al., 2014, p. 170).

To counteract the professional impact of critical incidents, nurses and midwives described a need for information and adequate support during and following the event (Calvert & Benn, 2015; Chan et al., 2018; Delacroix, 2017; Kable et al., 2018). They wanted to know the clinical aspects, which might have contributed to the situation and the outcome of the incident. They craved collegial support associated with their involvement: "I think I just needed advice because it was the first one I'd dealt with as a manager…what…procedures there were" (Kable et al., 2018, p. 243).

Synthesis 2 – Perceptions of support: Opposing perspectives on the perceived level of support nurses and midwives received during and after the incident were exposed and determined how well they coped with the multifaceted impact related to their experiences. Their perceptions of support from family and friends, work colleagues and managers through workplace practices and debriefing opportunities were inconsistent and ranged from sufficient to completely absent. This synthesis was derived from 53 findings and sub-findings aggregated in categories four, five and six.

Category 4 – Personal and peer support (n = 8 findings and sub-findings): Personal and peer support received by nurses and midwives during and after their involvement in critical incidents was described as a crucial factor in allowing them to cope with the multifaceted impact of the event. Many of them expressed the need to confide in a person they trusted, and yearned to be heard and understood by their colleagues and managers.

Although the compassion from family and friends were the main source of reassurance for some, most nurses and midwives described the support they received from their colleagues during and after critical incidents as unreservedly imperative to their recovery (Allen & Palk, 2018; de Boer et al., 2014; Kable et al., 2018; Mohsenpour et al., 2018; Thornton Bacon, 2017). Some perceived it as adequate and sufficient when peers informally acknowledged their distress (Allen & Palk, 2018; de Boer et al., 2014; Kable et al., 2018): "I get sufficient support from colleagues… the informal network" (de Boer et al., 2014, p. 170). The mental

processing of the event was aided when colleagues were available to talk about the incident and offer active emotional as well as practical support (de Boer et al., 2014; Kable et al., 2018): “The ability to talk with your co-workers… is probably the first debriefing type of thing that you do and it’s usually done during the clean-up… and then everybody sort of goes off and gets the opportunity to have a break… talk to your senior colleagues… (about) what happened" (Kable et al., 2018, p. 244).

Receiving sympathy and attention after involvement in an incident provided an opportunity to strengthen supportive relationships amongst colleagues (Kable et al., 2018; Mohsenpour et al., 2018; Thornton Bacon, 2017): “One of the other nurses said, “What can I do to help you?” I said to her, “Give me a hug, I need a hug,” I needed some support. It helped me cope” (Thornton Bacon, 2017, p. 371). Others felt the need for additional attention during and after the incident to deal with the crisis (de Boer et al., 2014; Thornton Bacon, 2017): “…if you are not so extravert, it is good that you’re offered support” (de Boer et al., 2014, p. 170).

Category 5 – Culture of workplace support (n = 26 findings and sub-findings): The workplace support received by nurses and midwives was perceived from contrasting viewpoints. In some instances, the workplace culture was considered outstanding and in other situations heavily criticised as inadequate or non-existent.

It was overwhelmingly evident in the literature of synthesis 1, that nurses and midwives need support from others to overcome the impact of critical incidents. Although most health care organisations adopt a ‘no blame’ approach to addressing incidents, the participants of the included studies often experienced a workplace culture in which forgiveness, solace and reassurance were not readily forthcoming, at times absent or even destructive (de Boer et al., 2014; Delacroix, 2017; Sheen et al., 2016; Thornton Bacon, 2017): “I’ll be honest, it’s a business. It’s healthcare but it’s a business, and you’re the provider, and okay, an error is expected, as part of their business plan. When it happens, well, they want you to follow protocol, follow the process of error reporting and that’s it. It does not include the human aspect of the error, no emotional support, no follow through, no follow-ups, they just make sure

the provider deals with it [error reporting], and move-on. It is a little cold, right, but that is the reality nowadays" (Delacroix, 2017, p. 406).

Many nurses and midwives would have liked to talk about the incident and preferred to be asked by their managers how they were coping (Allen & Palk, 2018; de Boer et al., 2014; Sheen et al., 2016): "Management acknowledging that stress and trauma is a reality of ED work and supporting staff effectively through appropriate debrief sessions" (Allen & Palk, 2018, p. 153). However, due to the organisational culture, the busyness of the environment and current workplace practices, the perceived needs of nurses and midwives were neglected, and taking the time to discuss the incident was often not priority (Calvert & Benn, 2015; de Boer et al., 2014; Thornton Bacon, 2017): "There's nothing. No one follows up with you. No debriefing. That's foreign, it doesn't happen here. That's the culture" (Thornton Bacon, 2017, p. 373). In recognition of the perceived needs and to overcome the inadequacy of personalised support to meet those needs, certain aspects of the workplace practices must be altered (Sheen et al., 2016; Thornton Bacon, 2017). Sheen et al. (2016) and Thornton Bacon (2017) claimed that if workplace practices did not provide adequate supportive measures routinely, then the culture ought to be reformed in order to meet the perceived needs of those involved in critical incidents: "We need support straight away. Then we certainly need a debriefing after. We need to change the culture so that's the norm" (Thornton Bacon, 2017, p. 373).

Following a critical incident, nurses and midwives expected their managers to create an environment conducive to positive mental health, which implied not only the provision of support and acknowledgment of their grief, but also recognised how interpersonal relationships might be affected by the event (Calvert & Benn, 2015; de Boer et al., 2014; Kable et al., 2018; Sheen et al., 2016). Apart from unsupportive or absent workplace practices described above, some of the participants were also exposed to a culture of negative reactions from their managers and colleagues, which were perceived as personally and professionally damaging and disempowering (Calvert & Benn, 2015; de Boer et al., 2014; Kable et al., 2018; Sheen et al., 2016): "I was scared that my reputation would be damaged on the ward... I did not talk to many people about it" (Kable et al., 2018, p. 242).

Several participants were blamed and told that the incident was their fault, others were mistrusted and exposed to rumours and gossip (Calvert & Benn, 2015; Chan et al., 2018; de Boer et al., 2014; Kable et al., 2018; Sheen et al., 2016): "The neonatal staff looked at me with suspicion. You are at fault; you are to blame for what has happened to this baby. That was just so awful to deal with because you know you can't deal with it because nobody is actually speaking to me" (Calvert & Benn, 2015, p. 109). They indicated concerns of a 'blame culture' where incidents were naturally followed by attempts to assess their culpability and punishment by the health care organisation, professional registration authorities or investigatory bodies (Delacroix, 2017; Kable et al., 2018; Sheen et al., 2016): "Basically every day we go to work you just put your life on the line really, your career on the line that's how it feels. This is just one really easy example of that" (Sheen et al., 2016, p. 69).

To create a positive workplace culture capable to meet the perceived needs of second victims, adequate support and access to services must be available, as well as an environment conducive to being heard openly and honestly by their managers and colleagues (Allen & Palk, 2018; de Boer et al., 2014; Delacroix, 2017; Kable et al., 2018): "I told it to my superior and the doctor… actually, they just listened… they could not say much about it… I felt supported by them" (de Boer et al., 2014, p. 170)

Category 6 – Value of debriefing (n = 19 findings and sub-findings): The value of debriefing was determined by the experiences of the nurses and midwives involved in it. Although genuine debriefing was commonly discussed as beneficial to resilience and coping, the need to improve current practice was apparent.

The nurses and midwives who received some form of informal or formal debriefing and perceived it as a positive experience and valuable strategy to seek reassurance, tended to cope better with the situation (Allen & Palk, 2018; Clark & McLean, 2018; Thornton Bacon, 2017): "Our manager held a debriefing like the next day and it helped after that, too, because we could get our feelings out and move on" (Thornton Bacon, 2017, p. 372).

Subsequent support from health care organisations was perceived as the most crucial need and should include immediate help followed by mandatory

debriefing involving all members of the incident (Allen & Palk, 2018; Clark & McLean, 2018; Sheen et al., 2016; Thornton Bacon, 2017): “We need to have mandatory debriefing after every single death in the hospital. We also need self-help. Mental health counselling needs to be made available and communicated to everybody…” (Thornton Bacon, 2017, p. 373).

Debriefing practices that recognised the personal and emotional cost of nurses and midwives and provided ‘peace of mind’ through assurance that they were not at fault, were scarce in practice (Calvert & Benn, 2015; Chan et al., 2018; Clark & McLean, 2018; Sheen et al., 2016): “There needs to be a lot more of them, because I think there are a lot of people that go home and worry. I don’t think we are very good at taking care of each other” (Clark & McLean, 2018, p. 81). Failure to provide and engage in a genuine debrief after an incident impacted further on the professional confidence to practice and were indicative of a contributing factor for staff attrition: “I have experienced when people have left because of certain arrest situations that they have seen” (Clark & McLean, 2018, p. 81).

Barriers to constructive debriefing were identified by some the participants, such as lack of awareness, availability, time or clear managerial guidance (Allen & Palk, 2018; Clark & McLean, 2018): “If the nurses are physically upset then it might happen… no one really recognises that it should be standard practice after every resus [resuscitation] situation” (Clark & McLean, 2018, p. 82). Debriefing sessions that focused either on risk management or improvement of clinical skills and neglected the personal and emotional needs, had the potential to threaten the resilience of the nurses and midwives and tended to imply shame and blame (Calvert & Benn, 2015; Chan et al., 2018; Clark & McLean, 2018). These interventions were perceived as destructive (Calvert & Benn, 2015; Clark & McLean, 2018): “Oh no it was not about constructive criticism or improving practice, oh no none of that. I was shouted at and told how stupid I was by the obstetrician so it was not constructive at all“ (Calvert & Benn, 2015, p. 107).

The nurses and midwives who received some form of informal or formal debriefing and perceived it as a positive experience and valuable strategy to seek

reassurance, tended to cope better with the situation (Allen & Palk, 2018; Clark & McLean, 2018; Thornton Bacon, 2017). The power of an affirmative and genuine debriefing practice to aid the recovery cannot be undervalued: “Our manager held a debriefing like the next day and it helped after that, too, because we could get our feelings out and move on” (Thornton Bacon, 2017, p. 372).

Synthesis 3 – Ability to move-on: The extent and persistent nature of living with the emotional, physical and professional impact critical incidents imposed upon those involved, and the effort it took to overcome the associated circumstances, were taken too lightly. General perceptions held by nurses and midwives about contextual issues related to their practice and their ability to move-on were dependent on their capacity to grow from their experiences, learn from the incident and cope constructively with the multifaceted impact. This final synthesis was developed from categories seven, eight and nine and contained 76 aggregated findings and sub-findings.

Category 7 – Living with the impact (n = 36 findings and sub-findings): Some of the emotional, physical and professional responses to the impact of the incident were enduring and personally distressing long after the event occurred.

Emotional remnants of the critical incident continued and contributed to the ongoing psychological impact for some of the participants of the included studies (Allen & Palk, 2018; Kable et al., 2018; Mohsenpour et al., 2018; Sheen et al., 2016). They described low mood, fear and general hyper-vigilance that affected their personal lives as well as their performance at work (Allen & Palk, 2018; Chan et al., 2018; Delacroix, 2017; Kable et al., 2018): “I became depressed. Affected my life significantly. Had to seek medical attention” (Allen & Palk, 2018, p. 153). The emotional turmoil was further complicated if the workplace was unsupportive and rife with negative communications, symbolic violence and bullying related to the incident (Calvert & Benn, 2015; Chan et al., 2018): “Then, after that, people were so wary of me when I’m taking care of any patient, like, when I ask them do you need help, they were like, “Oh, it’s okay, it’s okay. I can do things by myself. You don’t have

to help me". I got quite disheartened after the whole incident" (Chan et al., 2018, p. 168).

Some of the physical effects initiated by the trauma of the incident persisted and many nurses and midwives became anxious and feared repeating a mistake (Allen & Palk, 2018; Chan et al., 2018): "I developed anxiety – initially the symptoms of shortness of breath, sweats, palpitations, chest pain at night when asleep - it would wake me from sleep. Also depression, lots of crying. Grief was intense for approximately four months until I saw a counsellor at work" (Allen & Palk, 2018, p. 153).

Rumination on the event led the participants to re-examine their role and performance during the incident multiple times in their minds as they experienced the repercussions of the event and attempted to process the situation (Allen & Palk, 2018; Chan et al., 2018; Kable et al., 2018; Mohsenpour et al., 2018; Sheen et al., 2016): "I keep going over it in my mind, checking to see if there is any way I could have handled it differently. I keep trying to reassure myself that what I did was correct" (Allen & Palk, 2018, p. 152).

Nurses and midwives became acutely aware of the risks and dangers within their workplace and reported hyper arousal and heightening attention during patient encounters as well as changes to their practice (Allen & Palk, 2018; Delacroix, 2017; Kable et al., 2018; Sheen et al., 2016): "I was scared of going to work and always watched what was happening around me. I became more situationally aware and hyper-vigilant" (Allen & Palk, 2018, p. 152). They noticed to practise in an increasingly defensive manner, which permeated aspects of their professional self-image (Chan et al., 2018; Delacroix, 2017; Kable et al., 2018; Sheen et al., 2016): "More mindful of our practice…, and much more diligent… checking doses and charting and medication… thinking about… drug interactions… questioning basic doses" (Kable et al., 2018, p. 242).

For many, the involvement in the incident formed a vivid and enduring memory, regardless how much time had passed (Allen & Palk, 2018; Mohsenpour et al., 2018; Sheen et al., 2016): "I can't forget it. I can't forget it. I can still see the lady's

face. I can't forget that. I'm not going to forget it" (Sheen et al., 2016, p. 67). For some of the nurses and midwives, the lasting memories related to the event disrupted their personal and professional identities beyond the point of return and created such additional stress, loss and grief that they second guessed their careers (Calvert & Benn, 2015; Kable et al., 2018): "One more thing happens – that's it, I'm going" (Kable et al., 2018, p. 242).

Critical incidents were costly for nurses and midwives too, just as they were for patients. Living with the emotional, physical and professional impact indicated that because exposure to critical incidents in health care was inevitable, they had to find ways to learn from their experience and cope with the events (Chan et al., 2018; Kable et al., 2018; Mohsenpour et al., 2018; Sheen et al., 2016): "All people go to work. They get their salaries and live. Sometimes they do something wrong. No matter. We make a mistake and this affects every aspect of our lives. It is actually a bad situation. I feel pity for us" (Mohsenpour et al., 2018, p. 658).

Category 8 – Post-incident growth (n = 17 findings and sub-findings): The involvement in incidents created a powerful learning opportunity and those involved could draw valuable lessons from the event. This included changes to clinical practice, education of colleagues, as well as improvements to procedures and protocols within the health care organisations.

An important key factor in overcoming the impact related to an incident was learning from the experience it entailed, and it was important to understand why and how the incident occurred in the first place (Ajri-Khameslou et al., 2017; Chan et al., 2018; Clark & McLean, 2018; Sheen et al., 2016): "I learn from my mistake. I can take care of this kind of patient. I learn from this mistake…" (Chan et al., 2018, p. 168).

Enhancing clinical skills to prevent future incidents lead to professional growth (Ajri-Khameslou et al., 2017; Chan et al., 2018; Clark & McLean, 2018; Sheen et al., 2016): "The rapid injection of Dexamethasone caused severe itchiness and hot flushes in patient; therefore, I found out that by avoiding of quick injection of medications we could prevent of side effects in patients" (Ajri-Khameslou et al., 2017, p. 72). Nurses and midwives valued when the learning from incidents brought about

improvements to organisational procedures and protocols as well as their own future practice (Clark & McLean, 2018; Sheen et al., 2016): “It’s important to know clinically what had happened to that patient and, actually following that, we changed some of our practice on the ward” (Clark & McLean, 2018, p. 81).

Additionally, raising attention, seeking consultation and information before proceeding with clinical tasks and promoting accountability were proactive strategies to minimise general risks surrounding the occurrence of incidents (Ajri-Khameslou et al., 2017; Mohsenpour et al., 2018): “Although it was a very bad thing, it also had the effect that I’m much more careful. I am very careful with drugs. I read more and check drug cards” (Mohsenpour et al., 2018, p. 659). Sharing one’s experience with other health care professionals required courage but was an influential measure to impart knowledge, prevent future errors and support other second victims (Ajri-Khameslou et al., 2017; Chan et al., 2018; Mohsenpour et al., 2018): “Whenever, I train nurses, I tell them that there are many problems which might happen. I have experienced similar situations as well; therefore, there is no need to worry, however, try not to make the same mistake that I made” (Ajri-Khameslou et al., 2017, p. 73).

Experiencing the learning arising from incidents within themselves, their organisation, as well as that of their colleagues, participants regained a sense of control of their initial disordered state associated with the multifaceted impact the event created (Chan et al., 2018; Mohsenpour et al., 2018): “I had a tablet, and so when any error occurred in my ward, I made a file about it. I evaluated the error and learned and taught [what I learned] to my colleagues. I even presented some of my findings at a nursing congress. Sometimes, I achieve a feeling of satisfaction and power after controlling the error effects” (Mohsenpour et al., 2018, p. 659).

Training to promote coping and resilience was suggested by some of the participants to help them learn to understand their reactions related to critical incidents and resist burnout and professional fatigue (Allen & Palk, 2018; Chan et al., 2018): “If someone could tell me a way of thinking of events that would make me more accepting of them, and help me understand my emotions towards them, then I would be interested“ (Allen & Palk, 2018, p. 153).

Category 9 – Coping with the impact (n = 23 findings and sub-findings): Various approaches and strategies to cope after the event and deal with the impact of the incident emerged. Coping with the new post-incident reality was context dependent and highly individual. Only five studies reported on coping strategies and many of them were neither constructive in nature, nor perceived to be sincerely proposed and upheld by the workplace.

To cope with the impact of the incident, participants of the included studies reacted in their own way. Those who saw the incident as a catalyst for change and experienced personal, professional and organisational growth after the incident coped through approaching life differently. They described a new-found hope and inspiration for improvement (Allen & Palk, 2018; Delacroix, 2017; Thornton Bacon, 2017): “It made me value life more and want to make a difference for my dying patients” (Allen & Palk, 2018, p. 153).

Many engaged in atypical coping strategies to diminish their ongoing distress without fully addressing the real problem (Ajri-Khameslou et al., 2017; Allen & Palk, 2018; Delacroix, 2017; Thornton Bacon, 2017). Some of the participants avoided actions that could lead to repeating the incident or focused on something else (Ajri-Khameslou et al., 2017; Delacroix, 2017; Thornton Bacon, 2017). They either avoided performing certain care practices because they lead to harsh consequences or tried to hide any problems (Ajri-Khameslou et al., 2017; Delacroix, 2017): “I tried not to deal with urinary catheterization and if I did, I was very careful. Furthermore, if there was a case which was difficult for me to do so, such as catheterization of the bladder, I said that I was not able to do it” (Ajri-Khameslou et al., 2017, p. 73). Others became obsessive in a desperate attempt to avoid future errors: “My anxiety level of course has gone down over a period of time, but I still double, triple check the chief complaint to be addressed during the visit. [NP overlooked one patient’s complaint, which led to a misdiagnosis.] The error has kind of heightened my vigilance… it made me hyper-vigilant” (Delacroix, 2017, p. 406). Another coping mechanism was to avoid specific colleagues who would remind them of the incident. Mistrusting relationships developed and teamwork became exhausting: 'Whenever I have to work with some careless nurses who were causing problems, I tried to either change my shift or in

some case where there was no other choice, I did all the tasks on my own and tried to avoid them" (Ajri-Khameslou et al., 2017, p. 73).

Receiving the needed leave or breaks after the event was an important factor in coping and recovery, although it was heavily dependent on the flexibility and support of the workplace (Allen & Palk, 2018; Chan et al., 2018; Sheen et al., 2016; Thornton Bacon, 2017): "I took quite a lot of annual leave after the incident… I didn't want to go to work, I took like time off to just you know, think it through, maybe I should just get fresh air, but then even when I'm at home I still keep thinking about the patient" (Chan et al., 2018, p. 169).

Actively seeking out support from either family, friends and work colleagues or from professional counselling services was a further key coping strategy (Allen & Palk, 2018; Sheen et al., 2016; Thornton Bacon, 2017): "Once you've talked to somebody about it properly it's as if a weight is just lifted off your shoulders… you feel like you've just got it off your chest and you can sort of move on in a way" (Sheen et al., 2016, p. 68).

What nurses and midwives perceived as beneficial to build resilience and promote coping with the incident was not always genuinely supported and received in reality. Some strategies were personal, such as spirituality and having faith (Chan et al., 2018; Thornton Bacon, 2017). However, others were more workplace orientated and included debriefing, peer support, educational needs, leave and better access to counselling services (Ajri-Khameslou et al., 2017; Allen & Palk, 2018; Thornton Bacon, 2017): "Easier access to counselling, have a base at the hospital who can come as close to the actual occurrence of the event" (Allen & Palk, 2018, p. 153).

2.10 Discussion

This systematic review has highlighted the widespread impact of critical incidents on nurses and midwives, determined their perceived level of support and explored their ability to move-on. The review findings were echoed elsewhere, although previous research associated with the second victim phenomenon mostly represented doctors and physicians, paramedics or a combination of health care

professionals (Mishra et al., 2010; Scott et al., 2009; Ullström et al., 2014). For that reason, I believe that although the experiences and perceptions associated with critical incident may be different from person to person or for particular professional groups, they are not disparate or unique to the professions of nursing and midwifery. Nurses and midwives do not work in isolation, but rather within a multidisciplinary team and I have therefore decided to situate the findings of my systematic review within the second victim literature, rather than within previous research specific to critical incidents in nursing and midwifery.

This systematic review identified the underestimated extent and magnitude of the emotional, physical and professional impact of critical incidents. Critical incidents are not only devastating for patients but their effects resonate persistently among those involved in them (Scott et al., 2009; Wu, 2000). Although health care professionals endeavoured to protect patients from harm and anticipated adversity, incidents were not always preventable. Critical incidents in health care have been defined as unexpected, sudden events that triggered a response significant enough to overwhelm the usually effective coping skills of health care professionals and cause significant psychological distress (de Boer et al., 2014). Any event involving a patient, even if it was not unexpected, has the possibility to initiate distressing reactions (Scott et al., 2010). Despite the heterogeneity of critical incidents, the potential to impact upon the most resilient health care professional and leave them emotionally traumatised is comparable (Scott et al., 2010). The immediate external and internal turmoil, which led to the inability to focus and think coherently was reported in a study in the USA, where the responses of 31 physicians, nurses and other health care professionals who experienced a critical incident were analysed (Scott et al., 2009). To reduce the emotional impact, “emotional first aid” was a concept described by Scott and colleagues, where second victims obtained emotional first aid by seeking a “safe” person to confide in (Scott et al., 2009, p. 328). Emotional support was determined as paramount by the nurses and midwives of the included studies in my systematic review. This finding was confirmed by a group of paramedics in the USA, whilst Swiss anaesthesiologists and a team of American physicians, nurses and other health care professionals reported to be unsure where to go for help and tended to

suffer in silence and alone, because formal professional assistance fell short (McLennan et al., 2015; Mishra et al., 2010; Scott et al., 2009).

Similar to the findings of this review related to the professional impact, self-esteem at work and clinical competence can be negatively influenced by these life-altering experiences, and thus affect health care professionals' capacity to practice within the profession, as faced by midwives, nurses, doctors and allied health professionals who participated in previous studies (McCool, Guidera, Stenson, & Dauphinee, 2009; McLennan et al., 2015; Ullström et al., 2014). Repeated retrospective re-enactment and re-evaluation of the situation triggered intrusive reflections and brought about an emerging sense of self-doubt and internal inadequacy (Scott et al., 2009). In a study of 22 midwives from various practice settings, who were exposed to neonatal or maternal death or another catastrophic event, disturbing recollections triggered cognitive, emotional and physical symptoms for them (McCool et al., 2009). Similar results were reported in a Swedish study of physicians, nurses and allied health care professionals who described episodes of flashbacks and re-living of the event, provoking reduced confidence in decision-making (Ullström et al., 2014) . Although focusing on pre-hospital care and not nursing or midwifery per se, these reactions were comparative in the findings of a survey that included American emergency medical technicians and paramedics, which revealed experiences of repeated upsetting thoughts and troubling memories after critical incidents (Mishra et al., 2010). A state of powerlessness and overwhelming emotions as well as feelings of being haunted, alone and isolated stemmed from this professional reflective stage (Scott et al., 2009), leaving second victims craving support to restore their personal integrity.

Several nurses and midwives in this review identified the significance of an empathetic and comforting support system. Apart from receiving personal reassurance from friends and family, a workplace culture that included genuine support from colleagues and managers, as well as access to professional counselling services were necessary to restore personal and professional integrity after critical incidents (de Boer et al., 2014; Kable et al., 2018; Scott et al., 2010; Thornton Bacon, 2017). Resonating with the findings of this review, the perceptions of whether formal

support was sufficient was very individual and varied considerably in the literature. Whilst some second victims asserted that formal support was quite adequate, previous research suggests that overall, it was generally perceived as lacking or even completely non-existent (Healy & Tyrrell, 2013; Joesten et al., 2015; Scott et al., 2010; Ullström et al., 2014).

The physicians, nurses and allied health care professionals who participated in Ullström et al.'s study (2014), which investigated the health care organisation's support they received following an adverse event, expressed the critical need for sharing what happened with others to reduce the emotional burden and receive reassurance. On the other hand, some of the nurses, physicians and allied health professionals stated that they were hesitant to disclose any information about the incident, as they became increasingly self-critical, because they dreaded criticism from their peers and feared damage to their professional reputations (Ullström et al., 2014). Similarly, an unsupportive, negative work environment intensified their feelings of self-doubt and further fuelled the consuming threat to a professional future in health care (Joesten et al., 2015; Scott et al., 2009). Despite the evidence that debriefing helped to resolve post-incident stress, many health care professionals, including nurses and midwives, stated that they were never offered the opportunity to participate in it, and claimed that formal guidelines for debriefs were not in place at their organisation (Healy & Tyrrell, 2011; Ireland, Gilchrist, & Maconochie, 2008; Joesten et al., 2015; Piquette, Reeves, & LeBlanc, 2009). To increase awareness of the needs of second victims and improve workplace practices related to debriefing, best-practice guidelines in this area should be developed and access to existing and available services, such as legal advice, disclosure support and counselling should be improved and actively promoted (Joesten et al., 2015; Theophilos et al., 2009).

In congruence with the findings identified in this review, the literature illustrated the enduring nature the impact critical incidents had on second victims and highlighted the need for those involved to find strategies to cope with the events (Halpern et al., 2011; Kirby, Shakespeare-Finch, & Palk, 2011; Mealer et al., 2012b). The experience of living through the impact of a critical event has been described as

long-lasting, producing an imprint of a permanent memory of the incident and caused anxiety about future incidents (McLennan et al., 2015). Ongoing and debilitating personal problems, including anxiety and depression as well as growing doubt of their professional abilities have made it demanding for the nurses, physicians, medical students, pharmacists and respiratory therapists who participated in an American study of the emotional support following clinical events and move-on (Scott et al., 2010). Those nurses, physicians and allied health professionals who received inadequate organisations or peer support and endured a wearying investigation procedure, experienced a prolonged and deepened impact as well as a lingering emotional burden (Ullström et al., 2014). Participants of an American study that compared a group of ICU nurses with Post-Traumatic Stress Disorder (PTSD) as a result of critical incidents within their already stressful workplace environment, to a group of highly resilient ICU nurses, further reported the suffering stemming from disruptive thoughts of regret and experiences of general pessimism (Mealer, Jones, & Moss, 2012a). While others with strong spirituality, robust role-models and sound social networks perceived to cope with the pressure in the ICU environment and displayed superior optimism consistent with traits of resilience (Mealer et al., 2012a). How successful individuals moved-on after living through the experience of the event was highly unique and divergent in the literature (Halpern et al., 2011; Lewis et al., 2015; Scott et al., 2009). Some nurses, physicians and other health care professionals continued their employment in the clinical area where the incident occurred and alleged that they have worked past their issues related to the event, whilst others seriously contemplated leaving the profession (Scott et al., 2009). Because research about the application of coping strategies in nursing and midwifery practice is scarce, lessons can be learned from an Australian study which included a group of paramedics (Kirby et al., 2011). Some of the participants displayed maladaptive and ineffective coping mechanisms that often resulted in continuing symptoms of post-traumatic stress such as anxiety, sadness and depression, which contributed to their departure from the profession (Kirby et al., 2011).

The concept of professional burnout has been linked to the exposure to critical incidents in Canadian paramedics, as well as American acute care nurses, if emotional exhaustion and depersonalisation arose as a consequence of the traumatic experience (Halpern et al., 2011; Lewis et al., 2015). In spite of this, some second victims managed to survive the emotional fatigue and continued with their role in the clinical arena. Active coping methods and characteristics of resilience were successful for American ICU nurses in preventing a psychological overload following a trauma and enabled more positive adjustments (Mealer et al., 2012a). Mealer et al. (2012a) argued that the traits of resilient ICU nurses as well as adaptive coping skills can be learned and could therefore serve as either preventative measure or post-event strategy to assist health care professionals to thrive again in a tension-charged and highly stressful environment. There is however, sparse evidence in the international literature of the adaptive strategies applied specifically by nurses and midwives to continue their professional practice in clinical settings after their involvement in critical incidents.

2.11 Limitations of the review

Although the robust search strategy of this systematic review intended to locate and include all relevant publications related to the PICoS, I acknowledge the possibility that certain unindexed or grey literature were unintentionally overlooked or omitted. To ensure recency of the literature, I established a search parameter of five years and recognise that relevant previous publications may have been excluded as a result.

There are limitations to several studies included in this literature review as the majority of participants volunteered to contribute to the studies or demonstrated an invested interest in the subject matter, with potential of self-selection bias (Allen & Palk, 2018; Clark & McLean, 2018; Kable et al., 2018; Thornton Bacon, 2017). Chan et al. (2018) reported recruitment difficulties and claimed that those least distressed may have had little interest in contributing to research related to critical incidents, while those who were most distressed refrained from participation because they feared exacerbation of their symptoms. Recall bias was also a factor due to the

degree of detail recalled and the time elapsed since the incident (Clark & McLean, 2018; Kable et al., 2018; Thornton Bacon, 2017). However, the events had a profound effect on the nurses and midwives and most remembered significant particulars of them (Kable et al., 2018). Most of the included studies took place within a particular health care setting, for example an ICU, ED or other specific ward, involving a small sample of participants that represented a specific sub-population of nurses and midwives. This potentially limited the transferability of the findings to other clinical areas, institutions or populations (Ajri-Khameslou et al., 2017; Allen & Palk, 2018; Calvert & Benn, 2015; de Boer et al., 2014; Sheen et al., 2016), although significant lessons can be learned from the experiences of second victims of diverse professional backgrounds.

2.12 Recommendations for future research

Only 11 methodologically rigorous qualitative studies explored the experiences of nurses and midwives following critical incidents since 2013. Whilst these studies highlighted the impact and need for support, not many reported specifically on adaptive coping strategies beneficial to overcome the enduring impact associated with incidents. Although there is evidence in the literature that describes a link between the application of adaptive coping skills in order to withstand the stressful work environment found mainly in ICU or ED, there is a distinct gap in the evidence that recognises the experiences of nurses and midwives who work in clinical areas other than critical or emergency care. To date, scant information is available about the experiences of nurses and midwives employed in other clinical settings, such as general medical, surgical and maternity wards, perioperative areas, community care, rural and remote areas or primary health services. To the best of my knowledge, there is a lack of evidence to support that these practitioners are exempt from the exposure to critical incidents in their respective field of practice and their experiences and perceptions should be explored.

This review has identified that there is insufficient evidence about the strategies that nurses and midwives from clinical areas other than ICU or ED apply to determine which direction their future career path in health care will take. There is a

significant gap in the existing knowledge, which indicates that more work ought to be done to draw attention to second victims and their needs in general nursing and midwifery practice and explore constructive measures valuable to move-on from the extensive impact of critical incidents. Further research into the needs of second victims should be conducted in order to build a more effective approach to the provision of and access to workplace support systems, as well as to strengthen the organisational leadership in relation to the management of staff involved in critical incidents. Such research has the potential to develop recommendations to inform health care organisation, education programs, individual nurses and midwives and potentially other health care professionals, to strengthen their ability to navigate the aftermath of critical incidents and reclaim the professional confidence indispensable to remain in the workforce.

2.13 Chapter summary

Chapter two presented my systematic approach to the literature review with the purpose to rigorously examine the relevant international research to understand how the involvement in critical incidents impacted on nurses and midwives and explore the associated experiences and perceptions. The findings from this review highlighted the pervasive emotional, physical and professional impact of critical incidents, the nurses' and midwives' perceptions of available support systems, as well as their ability to process their experiences and move-on from the event. The discussion of the review findings identified a distinct gap in the current literature that would benefit from future research. Most of the available knowledge was derived mainly from nurses, midwives and other health care professionals, who worked in the specific areas of ICU and ED. Further research is required to gain understanding about the way in which nurses and midwives from a variety of non-critical clinical settings have been able to move-on after living through the impact of critical events, as well as how their future professional lives have been influenced by it. To support second victims of critical incidents to thrive within their profession and remain committed to high quality care, adaptive strategies that have been applied successfully by those involved should be explored and shared. Chapter three will now

introduce and explain the research design and methodological choice of my study to address this identified deficit in the current literature and address the aims and objectives of my study.

Chapter 3. Methodology

3.1 Chapter overview

Within this chapter, I describe the scientific worldview of this project based on the constructivist paradigm, which honoured the inductive style of qualitative research suited to the methodology of interpretive description (Thorne, 2016). To determine how to gain understanding relevant to this topic and contribute to the body of literature available to date, I reflected on the philosophical, ontological and epistemological stances, which underpinned my choice of the interpretive descriptive methodology central to this study. The ontological and epistemological approach was consistent with my intention to interpret experiences others have within their own reality in order to construct meaning, rather than discover it (Crotty, 1998). I also detail how the methodology of interpretive description considers human commonalities and acknowledges the inseparable relationship between myself as the researcher, and the study participants (Thorne, 2016). In order to capture the rich data necessary to answer my research question, the methodology of interpretive description was chosen, because it enabled the integrity and coherence of theoretically driven traditional approaches, while permitting flexibility to consider defensible design variations related to context, situation and intent (Thorne, 2016). Interpretive description as methodology determined the methods and processes of participant sampling and recruitment, data collection and analysis and enhancement of credibility and trustworthiness of findings. This chapter further addresses the ethical considerations and explains the importance of my own reflexivity, as well as how this enabled me to consider potential bias in a qualitative context within my study (Thorne, 2016). To emphasise and support my decisions related to the research design, I briefly outline how the methodology of interpretive description was situated within the philosophical assumptions of qualitative research, and how my methods were coherent with the ontological and epistemological expectations of knowledge generation.

3.2 Scientific worldview and guiding research paradigm

Qualitative research is acknowledged to be the most appropriate approach to explore human experiences in the social and health sciences (Creswell, 2014), as it enables researchers to provide insight into the depth of people's feelings, thoughts and experiences (Davies & Hughes, 2014). A qualitative research design was therefore most appropriate for me to gain an understanding and explore the experiences of nurses and midwives who had moved-on after involvement in critical incidents. Emerging general themes were constructed from particular, individual stories, enabling me to make interpretations of the meaning derived from human experiences (Creswell, 2014). Through the lens of the participants, I was able to explore their life experiences situated within their distinctive contexts. This approach aided my understanding of the complex and diverse relationships that existed within participants' lives, whilst recognising and respecting, the uniqueness of each separate case (Denzin & Lincoln, 2013). Qualitative research lends itself to an inductive style, which focuses on the individual, as well as the shared experiences of critical incidents and was consistent with the philosophical paradigm of constructivism (Creswell, 2014).

According to Lincoln and Guba (1985), a paradigm is a set of beliefs, also recognised as a worldview, which is shared by communities of researchers and addresses the philosophical assumptions concerning the nature of reality, the means by which knowledge should be gathered, and the relationship between the researcher and the study participants. The constructivist paradigm therefore aligned with the epistemological stance that is consistent with how new knowledge is created in relation to the impact of critical incidents. As a researcher who is situated within a constructivist paradigm, my intent was to interpret, or give meaning to, the experiences nurses and midwives had within their specific context in which they live and work (Creswell, 2014; Denzin & Lincoln, 2013).

To uphold the ontological notion that multiple realities exist, which are shaped by each individual's interactions and experiences (Appleton & King, 1997), I have been mindful to capture the distinct essence of the impact of the critical incident

on the participants, throughout my research process. Combining this ontological positioning within the constructivist paradigm, enabled me to convey the intent I had in understanding each individual's reality to capture the multiple and divergent understandings that emerged from the data as a whole (Appleton & King, 2002). The participants' stories illuminated the presence of multiple realities as they described their initial responses to the incident and then shared the impact this had on the 'true' reality of their personal and professional lives, finally sharing how they eventually moved-on from it. Through the interpretation of the participants' narratives, these realities that co-existed were revealed to me, which brought coherence to their experiences within the context of their natural world (Creswell, 2014).

Constructivism also endorses a subjectivist epistemology, where knowledge is the understanding of the truths or principles we use to conduct our personal and professional lives (Borbasi & Jackson, 2012). As a constructivist researcher, I commenced the study with the assumption that a priori theory cannot encompass all realities and that the understanding of a phenomenon must emerge from or be grounded in that phenomenon itself (Thorne, 2016). The purpose of my study was to explore the experiences of nurses and midwives in non-critical care settings who have been involved in a critical incident; to identify adaptive strategies that have been employed by them in order to move-on, and to explore if exposure to the event had influenced their future professional lives. I based my research design on the key epistemological stance that knowledge is constructed, rather than acquired or discovered (Crotty, 1998), and therefore honoured the individual truths and subjective perceptions of each participant, while seeking to understand any similarities within their experiences.

3.3 Interpretive description

An exploration of suitable methodologies to address the aims of my project and align with my philosophical assumptions, revealed the interpretive descriptive approach, which evolved from the methodological traditions of ethnography, grounded theory and phenomenology (Thorne, 2016). Interpretive description was

synergistic with the aims of this study, based on the application to the qualitative description of phenomena in health disciplines and the harmony with my personal philosophical, ontological and epistemological standpoint (Thorne, 2016). Interpretive description enabled the explicit attention to the value of subjective and experiential knowledge; it recognised that the human world is constructed of multiple realities and acknowledged the unique interaction between the "knower and the known" in the production of a research outcome (Thorne, 2016, p. 82).

3.3.1 Development of interpretive description

Interpretive description was developed by Thorne, Reimer Kirkham and MacDonald-Emes (1997) to explore complex experiential research questions relevant to nursing practice and other health disciplines that could not be sufficiently addressed with existing qualitative designs (Thorne, 2016). Interpretive description methodology arose from the need for a qualitative research approach that not only had the capacity to generate understandings of phenomena relevant to practice applications, but was also useful to address questions arising "from the field" of practice (Thorne, 2016, p. 30). Thorne (2016) considered that traditional qualitative research designs were entangled in strategies and techniques stemming from theoretical assumptions rooted in original social science disciplines, while interpretive description supported design variations connected to specific features, including intent of the research and context of the situation. Interpretive description retained the coherence and integrity of theoretically driven conventional approaches and provided a design logic and organising framework for the professionally motivated knowledge generation, which was synergistic with my project compared to traditional research designs (Thorne, 2016).

3.3.2 Interpretive description versus traditional methodologies

Unlike other qualitative methodologies that aim to either develop theories as with grounded theory, focused on individual beliefs, experiences and perceptions as with phenomenology or studied shared meanings and practices as with ethnography (Guest, Namey, & Mitchell, 2013), interpretive description has

combined the methods of its ancestors. Thorne (2016) considered formal methodological traditions were somewhat grounded in a theoretical approach, whilst interpretive description supported the fundamental purpose of social science research to capitalise on phenomena with the aim to answer elemental and practical problems related to what constitutes the nature of human experiences (Thorne, 2016). Interpretive description upholds elements of the traditional method of grounded theory, which originated from the collaboration between Glaser & Strauss (1967). The purpose of a grounded theory study is the development of a general, abstract theory and thus this approach did not sufficiently support the aims of my study. I aimed to gain an understanding of the experiences of nurses and midwives rather than to develop a theory about moving-on. A synergistic relationship does however exist between grounded theory and interpretive description, not only through the systematic approach to data collection and analysis, but also by stipulating steps to allow ideas and concepts to become apparent from the data, which are refined and categorised into themes (Creswell, 2014; Thorne, 2016).

A similar situation occurred with conventional phenomenological research, which describes the essence of lived experiences of the participants related to a phenomenon of interest (Creswell, 2014) and therefore had limited applicability to my study in its traditional form. Some types of phenomenology propose the technique of 'bracketing' the researcher's heritage to reduce biases, assumptions and pre-conceived ideas (Creswell, 2014). Phenomenology did therefore not satisfactorily uphold my philosophical stance that knowledge is co-constructed by the inseparable relationship between the researcher and the participants and by the unique manner in which they influence each other (Thorne, 2016).

Finally, conventional ethnography did also not adequately provide for the aims of my study, although its data collection largely relied on interviews and observation (Creswell, 2014). Ethnography featured a design of inquiry that studied shared patterns of behaviour, actions and language of an intact cultural group (Creswell, 2014) and thus did not resonate with my study's objectives.

3.3.3 Choice of interpretive description

Interpretive description retained many beneficial elements of its ancestry from grounded theory, phenomenology and ethnography, while discarding certain limiting aspects (Thorne, 2016). Whist all of these traditional methodologies comprised approaches which lent themselves to the aim my study, there was not one approach suitable to address the research question. I chose interpretive description as it provided a rigorous, yet non-prescriptive methodology, synergistic with the nature of my enquiry and the knowledge I was intending to generate from my study.

3.3.4 Strength of interpretive description as method

The use of interpretive description as the methodology to guide this study has served as a suitable framework to explore and search out similar aspects and characteristics of the impact of critical incident on nurses and midwives, while honouring the inherent complexity of each case (Thorne, 2016). The intention of my interpretive description was to derive themes and patterns from subjective perspectives, which resulted in knowledge that has been co-constructed by the specific way the study participants worked together with me (Hunt, 2009; Thorne et al., 1997). According to Thorne, Reimer Kirkham and O'Flynn-Magee (2004), nurse researchers prefer to explore meanings and explanations rather than simple description alone because of their enhanced application implications. Findings of an interpretive descriptive study were also typically connected to the situation, the time and the context in which they were generated (Thorne, 2016), thus the results of this study were truly representative of my interpretation of the personal perceptions the participants revealed. Applying the methodology of interpretive description enabled me to generate findings that aimed to inform and guide nurses and midwives and potentially other health care professionals involved in critical incidents. Interpretive description provided a flexible, yet coherent and fully justifiable approach to demonstrate how individual instances contributed to the general patterns and analytic conclusions presented as findings in chapter five. In conclusion, the choice of interpretive description as methodology for my project has been presented here to address my overarching research question: “What can be learned from the

experiences of nurses and midwives who have moved-on after the impact of a critical incident that may be helpful to supporting nurses and midwives undergoing such experiences in the workplace?"

3.4 The researcher as instrument of the research process

Within the constructivist paradigm, I was striving to learn about the perspectives of other nurses and midwives who have been involved in a critical incident, while fully acknowledging my own subjectivity in that process. I was drawn towards an interpretive tradition that sought understanding of the world (Borbasi & Jackson, 2012). I intended to interact with the participants in a manner that enabled me to gain insight into the essence exposed by their experiences and perceptions and thus facilitated collaborative construction of the interpretation (Lee, 2012). My motivation to study the impact of critical incidents arose from my own involvement in many critical incidents over 20 years of nursing in various clinical settings, as well as in my role as an educator, and particularly during a secondment as a clinical risk manager. I accepted and formally addressed my initial curiosity to carry out this project before I commenced the data collection by considering my disciplinary heritage. I conducted an 'interview with myself' following the interview schedule (Appendix E) and captured my own perceptions as a written reflection. Interviewing myself was a valuable learning experience for me. Not only did I gain familiarity with the questions, I also realised the privacy and sensitivity of the information I was requesting from the participants. It provided me with a glimpse of the data collection process through the lens of the participants. Below is an extract of the personal reflection I compiled following an 'interview with myself'.

"I have experienced the effects critical incidents can have on health care professionals and was summoned on one occasion to give evidence in court as part of the coroner's investigation of the circumstances. Up until that time, I gave little thought to how I have personally dealt with the exposure to incidents at work. It was just something I got on with. However, it became more and more evident to be a challenge for me and I began to question my professional identity. It became increasingly difficult to feel in control of maintaining my own standard, whilst

satisfying my preoccupation with extreme safe practice. I felt surrounded and overwhelmed by the risks that prevail in clinical areas – day and night, 24 hours a day, seven days a week."

Although it is a hallmark of qualitative research to recognise the pivotal role of the researcher as the 'instrument' of the research (Creswell, 2014; Thorne, 2016), the process of formally recognising my own motivation to explore the impact of critical incidents on nurses and midwives enabled me situate myself within the study. Acknowledging my personal experiences and assumptions, as well as recognising the philosophical notions which underpin this project, helped me to conceptualise how I constructed my research.

3.5 Research methods

Guided by interpretive description methodology, I applied the following methods to select and recruit suitable participants, collect and analyse the data and create a rigorous audit trail whilst upholding the credibility and trustworthiness of qualitative research.

3.5.1 Sampling

To achieve representative credibility, I applied a transparent sampling logic to ensure that the participants were selected for the purpose of addressing the aims of this study (Thorne, 2016). Purposive sampling was utilised to recruit the desired number of participants. This facilitated the identification of participants with the necessary experience to maximise their contribution to the understanding of the research question. In addition, I applied the strategy of snowball sampling, also known as chain sampling (Guest et al., 2013), where referral originated from 'word of mouth'. Snowball sampling enabled me to recruit potential participants that may have been difficult to reach through other methods.

As with other qualitative approaches, the sample for a study guided by interpretive description could consist of almost any size, as there are no firm constraints regarding what constituted a sufficient number of participants (Thorne,

2016). It was therefore imperative to establish a suitable lower and upper limit as an estimate in the outset of the study with enough flexibility to adjust it once data collection in the field commenced (Thorne, 2016). Contrary to the notion of 'saturation' commonly used in qualitative research as justification to conclude the collection of data, interpretive description recommends an arbitrary sample size as there are potentially infinite variations of human experiences and thus, saturation may never be achieved (Thorne, 2016). I proposed to explore the experiences of nurses and midwives from an anticipated number of eight to 12 participants. This sample size range was consistent with other studies which had used interpretive description methodology (Atkinson & McElroy, 2016; Clark, Spence, & Holt, 2011; Williams & Haverkamp, 2015) and enabled me to capture sufficient density of the data (Hunt, 2009). Although the tenth interview still produced some new information, I believed at this point in time, to have reached sufficient depth and richness of the data, to cease data collection. After ten interviews had been completed, I entered into the more advanced analytical phase of analysis of the transcripts.

3.5.2 Data collection

Data collection occurred by separate but inter-related data collection processes between 6th June 2017 and the 16th of October 2017. Congruent with interpretive description, I drew upon multiple data sources to contribute to the trustworthiness of the findings from the study (Hunt, 2009; Thorne, 2016). Initially participants took part in individual face-to-face interviews. Following each interaction with participants, I created field notes and reflective memos, which added to the richness of their stories (Thorne, 2016).

3.5.2.1 Individual interviews

Individual interviews are considered one of the most important data collection methods for qualitative research (Creswell, 2014), and were therefore suitable to explore the concept of 'moving-on' experienced by nurses and midwives. The duration of each digitally recorded interview was open-ended but took between

30 to 60 minutes. Prior to each interview, I asked the participants four questions to ensure consistent information was collected related to their professional role (1), the clinical area they were working in (2), the incident type (3) and the length of time elapsed since the incident occurred (4) as per the interview schedule (Appendix E). I collected this data only to create professional profiles of the participants, which are portrayed in chapter four. I assured the participants that the details of the critical incident or patient information were not to be discussed in order to maintain confidentiality of patients and settings. Participants were invited to nominate the incident type on a pre-determined incident category list without disclosing any surrounding details of the event. This nomination set the scene and enabled both the participants and myself to refer to the incident by name without discussing the circumstances of it. I then opened each interview with a 'grand tour question' such as "please tell me more about your experience of living with the impact of the critical incident you were involved in".

As I was required to concurrently collect and analyse data within interpretive description methodology, I avoided directing the participants' narratives and continued to explore themes which had emerged from previous interviews (Thorne, 2016). This approach enabled me to actively engage with the data and contributed to the concurrent data collection and analysis approach (Thorne, 2016). To develop a more intimate connection with the data, I transcribed each recording verbatim immediately after the interview and compiled field notes and reflexive memos, as well as narrative interpretations of each story (Thorne, 2016). As the analysis progressed, I advanced my understanding of the data and moved beyond the initial in-depth description of the experiences from interviewees towards interpretation of their meaning (Hunt, 2009; Thorne, 2016).

To strengthen, deepen and challenge the emerging direction of the interpretive analysis, I contacted each participant and provided them with a written narrative of my interpretation of their experience (Thorne, 2016). Similar to the member-checking exercise of returning the interview transcripts to the participants to verify their accuracy, my approach served as a more meaningful method because

it enabled the enlargement and expansion of the initial data as the participants verified my interpretations and made further comments (Thorne, 2016).

To allow for this immersion in the data, the intentionally protracted recruitment of the participants permitted two weeks between each interview. In the period between meetings with participants, I was able to react to each of the stories and ponder about the nuances of their individual experiences, search for similarities and relationships between the accounts and prepare to authenticate my ideas at the next encounter (Thorne, 2016).

3.5.2.2 Field notes

Following each interview, I composed supplementary field notes and appended them to the interview transcripts (Hunt, 2009; Thorne, 2016). My field notes acted as a form of interview-debrief, which enabled me to capture information about the communication that could not be audio-recorded (Guest et al., 2013). My notes represented a written account of what I saw, heard, experienced and thought during the course of the data collection (Borbasi & Jackson, 2012). They were accurate, organised and descriptive in nature with a distinct focus on the research problem (Borbasi & Jackson, 2012). I recorded details about my perceptions of the interactions, such as the general tone of the participants' replies, their demeanour and body language during the interview, the environment and any new or novel information as well as themes that I had captured before (Guest et al., 2013). Compiling field notes was overall a very meaningful strategy to reinforce the interview transcripts. However, I found it especially evocative following the interview I conducted with assistance of videoconferencing technology. Although I did not physically share the vicinity with the interviewee, I was able to observe and capture the rich data derived from facial expression, nuance of vocal tone and non-verbal behaviour, as if I was in the same room with the participant. Consistent with the methodology of interpretive description, I suspended premature labelling of ideas to enable the attainment of the overall picture (Thorne et al., 1997). However, I captured the early insights and thoughts I gained in my field notes, so that they could

be verified during subsequent interviews and provide a basis to generate additional questions to be posed (Thorne, 2016).

3.5.2.3 Reflective memos

As reflexivity is an inherent element of interpretive description (Thorne, 2016), I not only reflected on the ideas I held about the phenomenon before I entered the field, I also maintained reflective memos throughout the data collection and analysis process. Although communicating effectively and respectfully is a standard for practice for registered nurses (Nursing and Midwifery Board of Australia, 2016, standard 2.2), I needed to develop well-honed research interview skills. A poor dialogue can compromise the quality of the data and therefore weaken the study itself (Borbasi & Jackson, 2012). Through reflection, I identified the strengths and weaknesses of each interview and adjusted my strategy for the next. Qualitative interviewing requires considerable skill, active listening and the ability to notice and follow-up on subtle leads provided by the participants (Borbasi & Jackson, 2012). More refined communication skills were required to elicit the exact information required to answer my research question and I continued to critically reflect on my practice as a researcher (Nursing and Midwifery Board of Australia, 2016, standard 1.2). To prevent impeding the way rich qualitative data is obtained, I avoided rushing their responses with my attempts to reign-in the conversation so that each question could be answered succinctly (Borbasi & Jackson, 2012).

Reflecting on the conduct of the interviews also helped me to ascertain if I showed the appropriate level of empathy as a researcher. Although I maintained my professional role as the interviewer and recognised the boundaries between professional and personal relationships (Nursing and Midwifery Board of Australia, 2016, standard 2.1), I was deeply moved by the stories the participants shared with me and often felt I was almost exploiting their traumatic memories for the benefit of research. It seemed I was intruding their private lives by asking them to tell me about their deepest and most personal thoughts. It also appeared to be discourteous to re-direct the participants when they trailed off topic, as I sensed this might infer disinterest. I was grateful that some of the participants mentioned they found it

cathartic to speak to me about their involvement in a critical incident, which made the process feel less invasive and restored my inner conflict.

Reflecting about the content of each interview helped me to situate the new information within the broader context. As I attempted to derive meaning of the data I collected, I continuously reminded myself of my research question to preserve my purpose. I continued to sensitively identify new approaches and asked additional questions to verify strategies expressed as valuable by previous participants, consistent with the methodology of interpretive description (Thorne, 2016). After ten interviews, I became acutely aware that by writing the reflections, the field notes, the transcripts and the narratives, I became closer to each of the cases (Thorne, 2016). (Thorne, 2016).

While field notes, reflective memos and personal journaling were not considered primary data, they formed a critical part of the research process and assisted me to be situated within my research role and project (Hunt, 2009; Thorne, 2016). An additional perspective of the participants was portrayed by my notes and memos, which provided a meaningful context to the data and built a coherent justification for the emerging themes (Creswell, 2014; Thorne, 2016). My next step was to further develop the ideas I held about 'moving-on' through synthesising, theorising and conceptualising the data integral to the analytic logic required for the interpretive progression (Thorne, 2016).

3.5.3 Participant recruitment

Participant recruitment was achieved through a variety of methods including advertising through social media, newspapers, professional organisations and through the various networks of Edith Cowan University. Participants were limited to nurses and midwives who self-identified as having moved-on following their involvement in a critical incident. Participant inclusion and exclusion criteria are described below:

3.5.3.1 Inclusion criteria:

Participants who considered they had moved-on following involvement in a critical incident in a non-critical care setting;

Participants who were employed as a registered or enrolled nurse or registered midwife at the time of the incident.

3.5.3.2 Exclusion criteria:

If the incident was currently undergoing legal proceedings or was under review by a health care organisation or a disciplinary board.

I developed a template invitation for nurses and midwives (Appendix F), which provided the basis for all recruitment strategies for the study. The invitation introduced the aims of the study, outlined the inclusion and exclusion criteria and encouraged interested potential participants to contact me via e-mail or phone for further information, to receive the participant information letter or to arrange an appointment for the interview (Appendix G). The invitation was advertised in local newspapers, professional organisations and online networks of ECU, LinkedIn and Facebook to publicly broadcast the invite to participate in this project (Appendices H, I and J). The Graduate Research School at ECU supported the recruitment process and promoted my project on the digital student news feed located on the sign-in portal web page. The School of Nursing and Midwifery further extended my invitation through their relevant digital networks and announced the project via e-mail to nursing and midwifery staff as well as postgraduate students with the endorsement of my research supervisor.

By the combination of recruitment strategies, seven (n = 7) of the participants of this study became aware of the project by the method of snow-balling, six of these participants used social media to access my Facebook page prior to contacting me. A further two (n = 2) participants read my invitation in the local newspapers, whilst the digital networks of ECU caught the attention of another two (n = 2) potential participants. However, I did not receive any interest through the professional organisations. A total of eleven (n = 11) potential participants self-

identified to participate in this study, although only ten (n = 10) met the inclusion criteria and were eligible to contribute to the project. Information and consent forms (Appendix K) were presented to participants prior to the interviews. Once consent was obtained, I asked permission to digitally record the interview. The interviews took place at a mutually agreed location either in my office at ECU, via videoconference or at a specific setting requested by the participants on dates and times convenient to them. I was cognisant that conducting qualitative research external to the naturalistic setting was usual (Creswell, 2014), however, due to the sensitive nature of the topic, it was warranted to choose a safe and confidential setting external to the clinical environment to promote sharing of potentially difficult and personal experiences.

3.5.4 Data analysis

To stimulate a coherent analytical framework for my interpretive description, I followed the thematic interpretive method described by Thorne et al. (1997). Intellectual cognitive procedures were the cornerstone of the analytic logic and conceptualisation that my interpretive description required (Thorne, 2016). Thorne (2016) suggested guidance of the cognitive taxonomy articulated by Morse (1994), which followed four sequential intellectual processes that are a useful depiction for the inductive construction of meaning: comprehending, synthesising, theorising and re-contextualising. These four processes supported my concurrent data collection and analysis processes and channelled my mental attitudes and cognitive operations, which underpinned my analytic approach to transform the data from pieces into patterns and from patterns into themes (Thorne, 2016). Supported by the data analysis flowchart of Figure 3-1, I illustrate how Morse's cognitive taxonomy harmonised with the concurrent data collection and analysis of interpretive description methodology (Thorne, 2016).

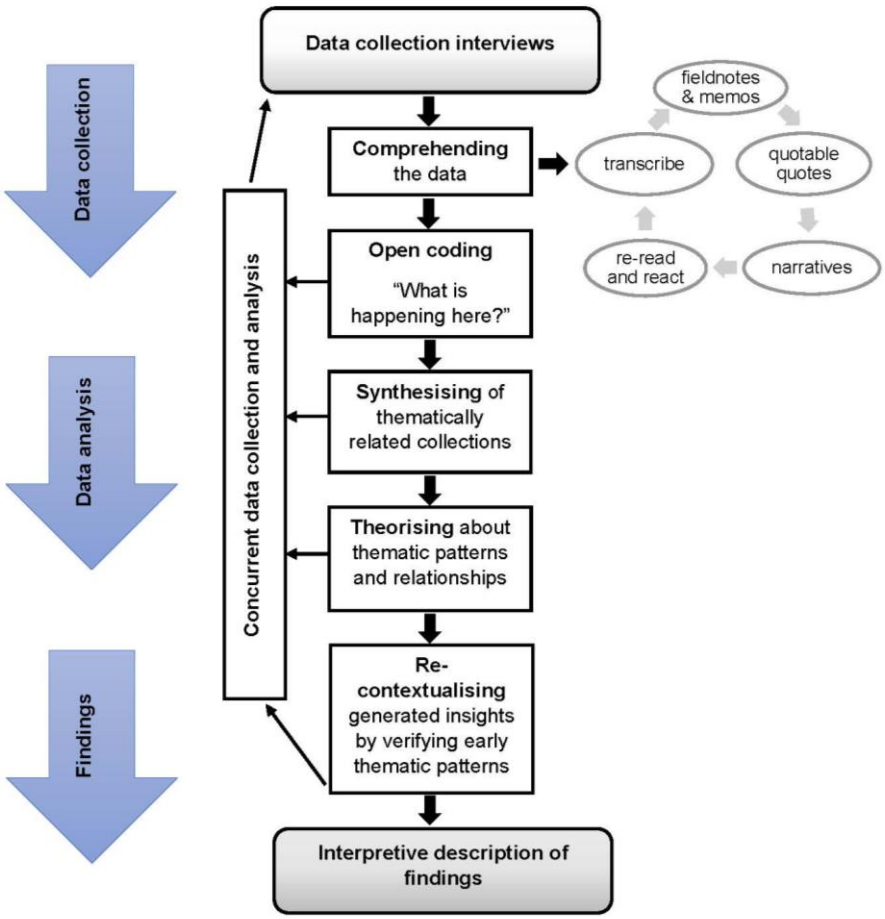

Figure 3-1 – Data analysis flowchart

3.5.4.1 Comprehending

Comprehending began with the data collection but continued throughout the concurrent analysis phase by absorbing pertinent information about the experiences of the study participants (Thorne, 2016). In the initial phase of the data analysis, I reacted to the data after each interview by transcribing the audio-recordings and compiling the narratives, as well as re-reading the transcripts, field notes and memos (Thorne, 2016). Time spent immersed in the data developed my sense of the whole interaction beyond the immediate impressions I formed following each encounter (Thorne, 2016). I imported all transcripts into the data analysis software program NVivo 11, to protect, manage, sort and code the data and create an audit trail that captured and supported the evolution of my interpretive analytic process (Thorne, 2016). Thorne (2008, p. 148) recommended capturing especially

powerful or poignant words or phrases as ‘quotable quotes’ early in the data analysis phase to explore, expand and confirm initial insights that began to form. The development of quotable quotes was an important tactic to safeguard the richness of the data by ensuring powerful statements were neither lost in the data analysis, nor overly dominated the evolving analytic process (Thorne, 2016).

3.5.4.2 Synthesising

The synthesis of the data allowed me to generate and manipulate speculations and patterns by verifying and falsifying elements within them (Thorne, 2016). Initial open coding fractured the data into discrete parts, from which I created collections according to the similarities and differences they revealed (Thorne, 2016). Coding is a researcher-generated concept with the purpose of interpreting the meaning of each individual datum (Saldana, 2016). Although Thorne (2016) cautioned against premature coding because it posed a serious threat to a high-quality analysis and thus a deep and meaningful inductive interpretation, some coding was necessary to initially sort, organise and synthesise the data. As the concurrent data collection and analysis unfolded, I was able to fully engage with inductive reasoning by testing and challenging preliminary interpretations of those thematically related data fragments (Thorne et al., 2004).

Because the objective of an interpretive description is to explore thematic patterns and recurring ideas rather than a fine-tuned level of words or expressions, I deliberately avoided excessive precision in my early coding and steered away from the traditional micro-analysis and line-by-line initial coding (Thorne, 2016). Instead, my initial open coding was broad-based and generic, which enabled me to create collections of data that may or may not have been thematically related. The initial open coding of the interview transcripts has also permitted the development of speculations about early insights and patters. I aimed to derive additional interview questions to create a dialectic between the evolving data collection and the individual cases essential to co-construct knowledge with participants (Thorne, 2016).

3.5.4.3 Theorising

Driven by my interpretive inquiry, I developed preliminary explanations for the thematic speculations and patterns as the synthesis and analysis advanced (Thorne, 2016). This stage demanded the inherent capacity to see relations between patterns, re-trace the analytical logic, form abstractions and follow intuitions to construct insights (Thorne et al., 2004). I constantly revisited the early general ideas which emerged from the concurrent data collection and analysis and continued to broadly code the data. My coding further supported my analytic process by detecting patterns and categories, which proposed or asserted the development of my interpretive description and allowed me to experiment with emergent thematic similarities (Saldana, 2016; Thorne, 2016). I suspended early conceptualisations of themes to enable the attainment of the overall picture by examining the data based on broad questions, such as "what is happening here" and "what am I learning about this" (Thorne et al., 1997, p. 175). I honoured the element of caution against hasty excessive coding encouraged by Thorne (2016) and resisted the premature labelling of themes. I suspended judgments to ensure my initial open coding process did not overshadow the analytic logic and inductive thinking, which guided a concurrent data collection and analysis of my interpretive descriptive study (Thorne, 2016).

3.5.4.4 Re-contextualising

Throughout this final stage of the data analysis, I first returned the "theoretical to the practical" so that generated insights could be verified and arising additional questions could be asked (Thorne, 2008, p. 166). The initial open coding of the interview transcripts facilitated the development of speculations about early insights and patterns. As a result, I derived additional interview questions, which created a dialectic between the evolving data collection and the individual cases essential to co-construct knowledge with participants (Thorne, 2016). This process was further reinforced by returning the narrative of my interpretation of each interview to the participants (Thorne, 2016) and ensured that early thematic patterns were incorporated in the ongoing data collection (Hunt, 2009), which formed the bases to develop a sound interpretive description (Thorne et al., 2004). Although

there were numerous approaches to qualitative data analysis, a thematic interpretive process was specifically suitable for this particular study. This allowed me to become intimately familiar with each individual case, before abstracting common insights to form the data, which could then be challenged and applied back to the individual cases (Thorne et al., 1997).

Upon completion of the concurrent data collection, I decided to take a step back for a short period of time to create distance from the immediacy and intensity of the final few cases. This has allowed me to approach the final data analysis and data transformation with the enthusiasm and curiosity, which inspired this inquiry in the first place (Thorne, 2016). I re-read the transcripts, field notes, reflections and narratives to expand my initial views and inform the advancement of the data analysis. I revisited the initial tentative codes, which I derived early during the concurrent collection and analysis phase. The comprehensive knowledge I gained of each individual case and through my immersion in the data, I was able to evolve the re-contextualising phase of my data analysis with a "bird's eye view" of the entire data collection (Thorne, 2016, p. 161). I was deliberately deconstructing what I thought I saw previously to test hunches and experiment with how these might fit together in new ways (Thorne, 2016). As I purposefully kept my early analysis broad, I assigned a number of statements to generic collections or did not capture them at all initially. After complete immersion in the data, I was in the position to make interpretations of the nuances and parallels, which were not obvious to me before (Thorne, 2016).

To facilitate this process I compiled analytic memos following the re-evaluation of each transcript. Analytic memos formed a written account of my reflexivity on the data (Saldana, 2016) and were a core element to subjectively, conceptually and systematically attend to the context of knowledge construction (Thorne, 2016). My analytic memos formed a core element of the inductive analysis required to develop of a coherent interpretive description (Thorne, 2016). As I reviewed each transcript again, I actively tried out different angles to illuminate and experiment with the complex data pieces within each tentative collection (Thorne, 2016), which formed the bases of my first cycle coding.

The goal of my first cycle coding was not to summarise the data, but to expound on the reciprocal relationship between the development of the coding system and the evolution of an interpretation of the phenomenon beyond the obvious (Saldana, 2016; Thorne, 2016). As a result of my first cycle coding, I allocated codes to sections of the transcript that were not captured before. I was also able to un-code and re-code some statements, because they matched a newly established, more focused code better or because the existing code had evolved and was re-named, therefore no longer supporting the interpretation of the particular datum (Saldana, 2016). I manipulated the data pieces within the early collections based on my increasing ability to see similarities and differences resulting from my deepening understanding of their meaning. After three intense weeks of first cycle coding, more robust and refined concepts emerged and sub-codes were created, as well as some of the tentatively assigned code names could be altered to ensure they represented the meaning of the data they contained (Appendix L). The coding decisions I made were based on the epistemological, ontological and methodological requisites of the study and aligned explicitly with my research question.

The elemental methods of my initial first-cycle coding were a combination of in-vivo coding, process coding and concept coding (Saldana, 2016). 'In-vivo coding' denoted literal, verbatim labels derived from the actual terms used by the participants, which embodied the meaning inherent with the person's experience (Saldana, 2016), such as the codes 'equipped to cope' or 'being heard'. On the other hand, 'process coding' made exclusive use of gerunds to connote action in the data, for example an activity like 'drinking wine' or a more general conceptual action like 'getting help'. During the more advanced re-contextualising phase of my concurrent data collection and analysis, I have applied the method of 'concept coding'. At this stage, I formed conceptual collections such as 'balancing life' and 'creating space'. Concept coding represented a suggested meaning broader than a single action, beyond the immediately apparent and tangible (Saldana, 2016) and therefore provoked the inductively thinking mind to "explore, question, seek and tentatively interpret" (Thorne, 2016, p. 153). According to Saldana (2016), concept coding was applicable to the research genres of phenomenology, ethnography and grounded

theory, honouring the ancestors of the “meaning-making activity” of an interpretive description (Thorne, 2016, p. 192).

Once the basic conceptual units within the data have been distinguished into a total of 43 first cycle codes, they required to be organised further into categories (Thorne, 2016). A second cycle coding method was applied to re-analyse, re-organise and categorise the array of first cycle codes (Saldana, 2016). My primary goal of a second cycle coding method was to develop a coherent meta-synthesis of the data corpus by advancing the categorical and thematic organisation (Saldana, 2016). Some codes merged because they were conceptually similar, while infrequent codes were assessed in relation to their overall utility towards answering my research questions. Certain other first cycle codes, which seemed like a good idea during the first cycle coding, were deemed redundant and dropped altogether (Saldana, 2016). During the second cycle analysis, I reconfigured the codes with the aim to develop a more select and smaller list of broad categories and sub-categories (Appendix M), which then progressed towards major themes (Thorne, 2016; Saldana, 2016).

The second cycle coding method of ‘pattern coding’ was useful to group the existing codes into a smaller number of categories and themes (Saldana, 2016). This process pulled the data from the first cycle coding into parsimonious units of analysis by identifying properties, which were thematically related (Saldana, 2016), thus establishing possible connections between the parts of the data set (Thorne, 2016). Pattern coding was an appropriate method for developing major themes from the data (Saldana, 2016, p. 236) and therefore supported the complex inductive reasoning process that considered relationships between the data pieces and patterns from which interpretive description evolved (Thorne, 2016).

According to Thorne (2016), a good coding scheme steers the researcher towards gathering data pieces with similar properties and contrasts them against other groupings with different properties. Coding within inductive research became an active process in the realm of thematic patterns and recurring ideas, which enabled me to stay firmly in control of the analytic process (Thorne, 2016). To achieve the required interpretive mindset for this progression, I advanced the data analysis

by exploring the existing 43 codes in NVivio 11. This approach allowed me to contrast and compare the data pieces in order to look for patterns, seek similarities, appreciate differences and embrace ambiguity (Wojnar & Swanson, 2007). To present a defensible argument for the directional choices I made, I ensured my coding scheme was based on the ontological and epistemological underpinnings of the study (Saldana, 2016), to not only co-construct knowledge resulting from my interactions with the participants, but also consider the multiple realities from where they stemmed.

The outcome of my final coding was to analytically reflect on the data within each evolving theme to build a structure for the coherent and solid inductive reasoning necessary for credible interpretive description findings (Thorne, 2016). I ultimately derived themes and patterns from the subjective perspectives captured during the initial data analysis phase and experimented with the complex data bits within each existing code (Thorne, 2016). Although I coded all transcripts independently, I ensured rigour during the analytic process by deliberating and conversing with my supervisors BE and AR at regular intervals. As a result of this deliberation and in combination with my methodological devotion, I was able to summarise the data within each theme or sub-theme into interpretations, which were fundamentally co-generated by the participants' responses in combination with my existing and emerging knowledge of the phenomenon in question (Thorne, 2016; Wonjar & Swanson, 2007). Thus, the aim was to construct an interpretive account of what the themes within the data suggested, while keeping them aligned with my research question as well as anticipating the needs of the potential audience (Thorne et al., 2004). As the data analysis firmed up and revealed the general patterns and themes, the data began to transform into credible and meaningful outcomes (Thorne, 2016), which eventually rendered as the findings presented in chapter five.

3.6 Trustworthiness

Credibility was particularly important in interpretive description research to ensure the integrity and quality of the project (Thorne, 2016). To be able to claim the findings of my study to be rigorous and credible, I aimed to meet the four evaluative

criteria established by Thorne (2016), such as epistemological integrity, representative credibility, analytic logic and interpretive authority.

To ensure epistemological integrity, the aims and the design of this study valued the epistemological principles of interpretive description methodology consistent with the philosophical worldview of constructivism addressed earlier in this chapter (Creswell, 2014; Thorne, 2016).

Representative credibility was achieved by the careful consideration of participant selection criteria and recruitment strategies that ensured the participants were representative of the population studied. I further achieved confirmation of data as a result of multiple data sources stemming from interviews, field notes, my reflective and analytic memo and the literature (Thorne, 2016). To strengthen the credibility of my research, a narrative of my interpretation of each participant's experience was returned to them as a member checking process and to present the study participants with an opportunity to verify my understanding of their story.

Analytic logic was attained by generating a rigorous audit trail that incorporated a transparent and consistent structure to the analysis of data from interviews, field notes and analytic memos (Thorne, 2016). I transcribed verbatim accounts of the interviews personally and highlighted any quotable quotes and emerging insights to incorporate in the ongoing data collection. Consistent with a concurrent data collection and analysis introduced and detailed earlier in this chapter, I adhered to a coherent analytical framework guided by the intellectual processes of comprehending, synthesizing, theorising and re-contextualising (Morse, 1994).

Lastly, interpretive authority was revealed by the trustworthy interpretation of the phenomenon external to my own experiences and bias (Thorne, 2016). I recognised my own experience, ideas and biases by writing the initial personal reflection prior to commencement of the study with the aim to acknowledge my existing disciplinary heritage (Thorne, 2016). Consistent with inductive inquiry, clarifying questions arose from my immersion in the data transcripts of previous

interviews, rather than from my personal curiosity, further contributing to the limitation of my own biases.

By implementing a sound methodological approach that addressed all four evaluative criteria established by Thorne (2016), I actively incorporated the epistemological integrity, representative credibility, analytic logic and interpretive authority as strategies to enhance the trustworthiness of my project and the qualitative credibility of the study findings (Creswell, 2014).

3.7 Ethical considerations

3.7.1 Ethical issues and risk factors

The design and conduct of this study was governed by guidelines contained in legislation and university policies. This research complied with the National Statement on Ethical Conduct in Human Research (National Health and Medical Research Council, 2015), the Privacy Act 1988 (Commonwealth of Australia, 2016), the Australian Code for the Responsible Conduct of Research (National Health and Medical Research Council, 2007) and the Conduct of Ethical Human Research Policy (Edith Cowan University, 2015). Respecting the fundamental human right of privacy of each individual participant, as well as their physical and emotional well-being, were the most significant ethical considerations in the design of my study. The Human Research Ethics Committee (HREC) of Edith Cowan University (ECU) in Joondalup endorsed this study on the 26th May 2017 (project number approval 17398, see Appendix N) and no participant recruitment or data collection commenced until ethical approval was obtained.

3.7.2 Informed consent

To fully inform potential participants about the research project, a Participant Information Letter (Appendix G) was be provided prior to involvement in the study. The document professionally introduced the research project and my profile as the researcher. The letter further outlined the process of the study, the confidentiality of information and the criteria and risks associated with voluntary

participation. I explained the purpose and process of the study at the commencement of each interview and allocated time to answer questions before gaining informed, written consent from each participant by completion of the Statement and Consent Form (Appendix K).

3.7.3 Benefits and risks

The benefits of participating in this study had the potential to be ongoing because of the cathartic advantages of sharing emotions associated with the critical incident with me (de Boer et al., 2014), as well as the publication and dissemination of the study findings. The benefits therefore outweighed the unlikely, minor risk of discomfort for the participants as assessed through the HREC application (Appendix O).

3.7.3.1 Benefits

It was not anticipated that this research would benefit the participants directly. However, the potential benefit of sharing what happened with others to reduce the emotional burden and provide reassurance has been established (Ullström et al., 2014). Despite the evidence that debriefing helped to resolve post-incident stress, many nurses and midwives were never offered the opportunity to participate in it (Healy & Tyrrell, 2013; Ireland et al., 2008; Joesten et al., 2015; Piquette et al., 2009) and therefore may never had the opportunity to voice their experiences related to the critical incident they were involved in. The findings from this study however, may be more helpful for other health care professionals who were exposed to a critical event, as well as their managers, rather than the participants themselves.

3.7.3.2 Risks

The risks to participants was determined as unlikely and minor according to the risk matrix required by the HRECs to which this study was submitted for approval. This was because the contribution to this study was entirely voluntary and self-selected. All participants were made aware of their right to withdraw from the study

at any time without further implications. I identified the potential risk of distressing recollections and managed this risk by facilitating any emotive discussion tactfully and thoughtfully. Although the participants 'self-identified' as having moved-on from their experience, I encountered participants who thought they did, but I doubted that they had actually moved-on. I provided each participant with contact details to counselling services in their area of residence to manage delayed intense emotional reactions following the conclusion of the interview (Appendix G). Personal information of any persons involved in the incident, which may have been unintentionally disclosed by a participant, was not necessary for this research and was therefore not collected for inclusion in a record or publication in accordance with the Privacy Act 1988 (Commonwealth of Australia, 2016, Section 16B 2 and 3). If I as the researcher became distressed as a result of the traumatic content from the interviews, my research supervisors debriefed and supported me and they monitored my well-being closely. I also had the opportunity to access the Employee Assistance Program at ECU if necessary.

3.7.4 Confidentiality

The privacy of participants was protected by de-identifying all data sources and by the use of pseudonyms and participant numbering. The only documents identifying the participants by name are the signed consent forms, which are stored separately from any other data. As this study principally focused on the experiences of nurses and midwives, details of the actual critical incident were not investigated. Therefore, I did not discuss or collect any patient information.

3.7.5 Data management and security

The strategies for data collection, handling, storage, retention and disposal was managed according to the Research Data Management Policy (Edith Cowan University, 2015b) and the Data Management Plan (DMP) for this project. Data management of all paper copies including consent forms, transcripts, field notes, reflective and analytic memos, as well as all audio recordings, will be stored in a locked filing cabinet in my office on the ECU South West campus. Digital data was

password protected, backed-up and stored separately from my allocated staff shared drive as per the ECU recordkeeping system. Research data will be retained for 7 years and then destroyed consistent with the Australian Code for the Responsible Conduct of Research (National Health and Medical Research Council, 2007).

3.7.6 Publication and dissemination of research findings

The publication and dissemination of the research findings will be in accordance with the Australian Code for the Responsible Conduct of Research (National Health and Medical Research Council, 2007). This will ensure that the confidentiality of all study participants will be protected and the intellectual truth, integrity and accuracy of the research findings will be maintained.

3.8 Chapter summary

This chapter has discussed the methodology of interpretive description and how this was philosophically aligned with the underpinnings of the constructivist paradigm. Also discussed was the appropriateness of interpretive description as a framework for this study, because it adhered to the ontological and epistemological stance which recognised that knowledge emerges from the subjective perceptions, honoured that reality is contextual, complex and individual and recognised the unique way the researcher and the participants interacted to influence each other. As a guiding methodological approach, interpretive description served to derive credible findings and potential recommendations, which addressed the aims and objectives of the study as presented later in this thesis. Interpretive description provided methodological guidance for the robust design of my research methods and my well-considered approach to participant sampling and recruitment. A coherent analytical framework of intellectual cognitive procedures directed the data collection and analysis based on four cognitive processes useful to for the inductive construction of meaning: comprehending, synthesizing, theorising and re-contextualising. Through experimentation with the data during a first and second cycle coding process, general patterns and themes evolved and I was able to begin to transform the data into credible and meaningful outcomes. To enhance the

credibility and rigour of my project, I maintained the evaluative cornerstones of interpretive description, such as epistemological integrity, representative credibility, analytic logic and interpretive authority, which reinforced the integrity of my project. In summary, the qualitative research design and choice of interpretive description methodology created the basis for the overall intention to my research project to gain understanding of the experiences of nurses and midwives who have moved-on from their involvement in a critical incident.

In the following chapter, I will introduce the participants to illuminate their personal stories and to give voice to their personal, long-lasting experiences associated with the event.

Chapter 4. Profile of the Participants

4.1 Chapter overview

Chapter four will now introduce each participant with an accompanying extract from my narrative summaries to bring their individual stories to life and give meaning to the findings presented in the following chapter. As discussed in the previous chapter three, I compiled these narrative summaries following every interview and then returned them to the participants for their opportunity to confirm, refute or comment on my understanding and interpretation of their accounts. This member checking process ensured that I perceived the meaning and significance of the participants' subjective descriptions. To respect and honour the participants' unique perspectives of moving-on from the incident, I have integrated some of their own words and phrases into their introductions to exemplify their personal stories and uphold the profound impact it had on their lives.

4.2 Participant information

All participants were young or middle-aged women who were involved in a critical incident in a non-critical care setting during their career in the capacity as a registered nurse (RN), enrolled nurse (EN) or registered midwife (RM). Nine RNs, one EN and one RM self-selected to participate in this study. The experience of one RN occurred in an intensive care type setting and therefore did not meet the inclusion criteria of the study. All other incidents occurred in non-critical care settings and were categorised by the participants as medication error, organisational non-clinical emergency, medical emergency, medication overdose, unexpected survival after resuscitation, unexpected deaths, delay in recognising and responding to deterioration, unsuccessful resuscitation attempt, and sub-optimal care. While the incident types were fundamentally different, several similarities and patterns evolved, which are revealed in the findings chapter of this thesis. Although the time since the incident occurred varied from two months to 32 years, the participants still vividly recalled the events and the effect it had on them at the time and since. All

participants discussed their personal thoughts and feelings without reservation and explained their unique experiences openly and honestly. None of the ten included participants withdrew from the study.

The methodology of interpretive description enabled me to interact and work with the participants in a unique way. My own experiences with critical incidents enabled me to establish a common ground with participants and draw on my background as a RN to build rapport and create a shared understanding of the phenomenon. Each participant was bestowed a pseudonym and their following profiles were compiled by drawing on the interview transcripts, my field notes and my reflective journal as well as the narrative summaries, which have been read and validated by each of the participants.

4.2.1 Florence

Florence was a middle-aged RN who lived in the metropolitan area of Western Australia (WA). She contacted me via social media after watching my recruitment appeal online and decided to participate in the study. The interview took place via Skype from her home. She was very calm and sat comfortably on a chair at her dining table, whilst enjoying a cup of tea. There was no indication of discomfort as she recalled the event and freely described her feelings associated with it. Although I conducted the interview with the assistance of videoconferencing technology, I was able to observe her facial expression and body language closely, which captured the same depth and richness of data as that of a physical face-to-face encounter.

Florence was involved in a critical incident on a medical ward 32 years previously. The incident had such a significant impact on her that she still thought about it to this day. The experience affected her quite badly psychologically, which also manifested as physical symptoms. It was a dreadfully frightening inner conflict for her. She felt that the incident was ultimately her fault, because she was the one accountable for it, even though it was not actually her who carried out the procedure. Florence was angry with herself. She did things in the aftermath of the event related

to her relationships with work colleagues, which she was not proud of. She believed that her principles were undermined by her actions following the event.

She visited her mother a few weeks after the event and she was distraught as soon as she saw her. She told her everything and her mother listened intensely. Florence cried probably the whole weekend she stayed with her mother; talking about it and getting extremely emotional helped her to come to terms with what had happened. She eventually started to feel more at ease. In time, she was able to resume duties at work that she had previously avoided. Around this time Florence had a planned secondment to a different health care organisation, which was about to commence. Her involvement in this incident has made Florence realise how easily things can happen in clinical practice and she was convinced that this experience had however, ultimately made her a better nurse. Florence still worked full-time in the capacity of a RN in a nursing education program; but she left the clinical setting several year ago.

4.2.2 Lucy

Lucy, a middle-aged RN, resided with her family in the South West of WA. Lucy nominated to visit my office for the interview and was willing to share her story with me. She spoke freely and quite factually without reacting emotionally to any of my questions. Although her involvement in the incident was still evident in her thoughts to this day, she considered that she handled the situation well at the time. Lucy stated that she did not often speak of the incident and I sensed relief in her voice that she had the opportunity to impart her experience.

Eight years ago, Lucy was involved in a critical incident in a regional hospital where she was employed as an after-hours manager. She believed that it did not really affect her much at the time. She remember that she felt calm and followed the set protocol that comes into effect in that particular situation. She had never experienced such an incident before and was amazed that everything just seemed to flow. She followed the correct guidelines and thought everything progressed as it should have. After the event, she had support from others, attended the debriefing sessions and was immediately offered access to counselling by the health care

organisation's Employee Assistance Program (EAP). Later it was brought to Lucy's attention that there was one area she had forgotten to notify of the organisational wide emergency during her escalation, which made her feel guilty and nauseous. She was relieved that the incident it was a false alarm, but she still felt as if she had neglected to carry out the duties of her professional role correctly. Lucy considered that she had moved-on from this incident relatively easily because she was well equipped to deal with it due to her lifestyle choices. The incident was not something that she publicly discussed or talked about, but she had considered sharing her experience with colleagues at work to that others could learn from it. Lucy still worked part-time as a casual RN for the same hospital where the incident occurred.

4.2.3 Erica

Erica was a middle-aged RN who resided with her husband in the suburbs of a regional town in WA. One of her friends shared my social media recruitment appeal with her and she took interest in the topic of my research. Erica decided to contribute to my study and welcomed me to her home for the interview. She ushered me to a small lounge right next to the entrance and gestured that I should take a seat on the couch. She joined me and engaged in the conversation attentively. She appeared composed, and answered my questions openly. There were no obvious signs of distress as she revealed the impact the incident had on her life.

Erica was involved in a critical incident at the hospital car park in her role as clinical nurse specialist five years previously. When she received the request to attend the incident at this unusual location; she did not know what to expect. She remembered that she was just trying to do her job, so she became very calm and focused entirely on the person she was helping to save. She reflected that during the event it felt like somebody had put their hands over her ears, giving her the illusion that everything around her was completely silent.

Following the event Erica had to work for the rest of her shift and cogitated how demanding it was to concentrate and function. So many questions and emotions were penetrating her thoughts. Although the person survived, she could not get the image of the person's face out of her mind. The incident replayed in her head like a

video recording, over and over again, for many weeks. Erica attended a group debrief session with the EAP, but she felt disappointed and annoyed that there was no individual follow-up by the health care organisation's management staff. This lack of acknowledgement of the potential distress that this event had caused made her feel that no-one was genuinely concerned anymore, as the EAP had fulfilled their duty and 'ticked the box'. Reflecting on how she could have managed things differently was her way of coping with it. Erica divulged that it was a traumatic experience for her, however, she believed she dealt with it quite well. Although Erica moved interstate since the incident occurred and changed her employer, she still worked as a RN in a hospital ward.

4.2.4 Rebecca

Rebecca was a middle-aged RN who lived in the South West of WA. Another participant shared the link to my social media recruitment appeal, which made her aware of my study. Rebecca was very eager to share her story and contacted me to invite me for an interview at her home. She seemed to feel at ease in her darkened lounge room amongst a multitude of art, ornaments and meditation cushions. Rebecca's own large colourful paintings, which incorporated meaningful poetry for her adorned the walls. She seemed deep in thought and took her time to formulate her profound responses to my questions. She did not initially appear upset or distressed; however, Rebecca was visibly moved when discussing her feelings associated with the event. She recalled the complex and life-changing effect it had on her specifically and made many rich and compelling declarations during the interview.

Rebecca was involved in a critical incident in her role as staff development nurse three years and eight months previously. The impact this incident had on her was life-changing. She was overridden with guilt and blamed herself for failing to prevent the incident. Therefore, she attended a short debrief session at the health care organisation immediately following the incident was asked to maintain strict confidentially. Rebecca therefore did not discuss the incident with anyone. So she went home – to be alone with her thoughts. She did not talk to anyone about the

incident, not even her closest friend and colleague in whom she would usually confide.

Rebecca was called into work the next day to give a statement about the events which had occurred. She was also not eating, couldn't sleep, felt nauseous and suffered other physical and emotional symptoms. Eventually she contacted the EAP, an action she felt de-valuing for her. Rebecca believed it was pathetic and weak to react the way she did. She was disappointed with herself and thought she was a failure.

Rebecca attended counselling by the EAP and tried many other strategies to reduce her stress, but nothing seemed to help. After attempting to overcome the impact of this incident for two and a half years, she reached the end of all her coping strategies. Her situation became overwhelming and despairing and negative thoughts began to cloud her mind. Begrudgingly, she initiated a compensation claim to commence extended leave, but never returned to work after that. It was a difficult and devastating decision for her to make. Rebecca lamented that she not only lost her job security, her friends and colleagues, but she also lost her identity as a nurse. Rebecca was the only participant who had not maintained her professional nursing role in any capacity at the time of the interview.

4.2.5 Laura

Laura, a middle-aged RN resided in a regional town in WA. She initiated contact with me after noticing the electronic link to my online recruitment appeal appearing on her University news-feed. Laura, a researcher herself, stated that she found it difficult to recruit participants for her own study and that this was the motivating factor to get in touch with me. She was genuinely interested in contributing to my study and stated that although she has been involved in numerous incidents during her career, she recently experienced one with particular significance. Laura requested to meet in my office and was very mindful not to disclose any incident details or provide identifying facts about the health care organisation where the incident took place. She was relaxed but focused and very articulate. Laura was

not distracted by anything as she willingly engaged with me and discussed the substantial impact the incident had on her as a nurse and researcher.

During her shift as a palliative care nurse, Laura was involved in a critical incident two months previously. This was not the first time she was exposed to an incident, which made her think she may well have been the reason for her strength to deal with this one. This particular event had a significant effect on her, because she was torn between what she was instructed to do and what her heart was telling her. She had many thoughts going through her objective mind at the time, but her emotional mind was struggling. She felt a mixture of sadness and anger about the futility of what had happened before her and walked away from that shift dreadfully perplexed. She was not only emotionally confused as to what was expected of her but was also unsure how to react from a professional point of view. Patient confidentiality prohibited Laura from discussing the event with friends or family. If there was going to be an intervention to help her rationalise what took place and get through the aftermath, she would have liked it to occur at the time of the incident or soon afterwards. However, she was left to deal with the situation silently and on her own. She felt devastated by it at the time.

Laura felt lucky to have learned the traits of resilience, which she attributed to her strength, hope and life experience. Laura described her generally positive outlook on life and believed it equipped her to deal with circumstances such as these. The incident influenced her professional life as a nurse and a researcher. She was convinced this situation could have been prevented with more direct and less ambiguous communication within the team. Laura still worked part-time as a RN on the palliative care ward of the hospital where she was involved in the incident and was undertaking further studies in this field.

4.2.6 Sandra

Sandra was a middle-aged RN approaching retirement who resided on a quiet street near the coast of WA. Sandra heard about my study by another participant who encouraged her to get in touch with me. She called me and asked to meet at her home for the interview. As I arrived, I noticed the garden. It featured an

eclectic collection of plants and represented the result a dedicated gardener with an enthusiastic interest in horticulture. Sandra seemed attracted to the topic of my research and was keen to reveal one of her many accumulated experiences with incidents during her 35-year nursing career. There were no signs of discomfort as Sandra answered my questions patiently. She did not appear noticeably emotional as she conveyed her story. My impression of Sandra at this meeting was one of a strong woman, stoic, and without fragility. She was in complete control of her emotions and guarded how much personal information she was willing to disclose to me.

Five years previously, Sandra was involved in a critical incident at a remote mining camp. Although she experienced several critical incidents in the course of her career, this particular one left a considerable impression on her. The traumatic circumstances of the event imprinted her memory with a visual image, which triggered distressing recollections of the incident for a very long time after it occurred.

Sandra was the only RN at the camp and was on her own when she was called to attend the incident. Despite doing everything she could, she was unable to positively influence the outcome of the event. She felt angry about the situation and consequently barely slept that night. There was also no follow-up investigation from the nursing agency which employed her after the incident. Sandra was aware that she was entitled to phone a crisis-line but decided not to. She did not envisage at the time that the incident would have such a long-lasting effect on her. Sandra felt that people expected nurses to ‘get on with these things and just cope’.

Although Sandra believed she had moved-on from it, she actually still thought of the incident every now and then at random times. A primary coping strategy she employed was to avoid triggering situations, and this helped her to achieve initial distance from it. She was eventually compelled to ask for professional help. She tried a variety of approaches to change the way she was thinking about this and past clinical incidents. In due course, she found her own strategy to help her deal with her stress and became engrossed in gardening. To be alone and engage in physical activity in the fresh air in her beautiful garden was most beneficial to her.

This individual incident was one of many that influenced Sandra's professional life as a RN. Sandra was employed as a RN at a local medical centre where she worked part-time on a casual basis, which allowed her to select her shifts according to her availability.

4.2.7 Andrea

Andrea was a middle-aged RN who lived with her husband and children in the suburbs of a regional town in WA. She expressed interest to participate in the study after accessing my recruitment appeal on social media. She contacted me and asked to meet at a local coffee shop. We relocated to a quiet park nearby, which was a more conducive environment of a confidential interview. Andrea was very talkative and trailed off topic several times during the interview. She spoke freely and unwearyingly about the effect this incident had on her personally and professionally. She was an incredibly genuine person and demonstrated integrity and patient advocacy throughout her story.

Andrea was involved in a critical incident during a night shift on a mixed medical-surgical ward about eight to ten years before. She was a nurse for a very long time and experienced many incidents in the course of her clinical career. This particular event was different from the others, because she experienced guilt associated with it. Despite Andrea's efforts, she questioned whether what she did that night was enough. She had the feeling that something was not right, but nobody else seemed to support her. She doubted her ability as nurse and distrusted her judgement for quite some time after the event.

Andrea divulged that conversing with other nurses and doctors she worked with cushioned her and lessened her burden. Her confidence was restored when her colleagues affirmed that she did absolutely everything she could at the time. Andrea was not offered a debrief session, counselling or time off from work. In fact, she was told on previous occasions after other events to 'just get on with it', so she felt compelled to return to work the next shift as per her roster. Andrea's strategy to overcome the often upsetting experiences with critical incidents was to remind herself that she was doing her best. She recognised and accepted that she was not

able to save everybody, but she still loved being a nurse. She learned from this situation to stand up for herself and become more assertive when advocating for her patients. Although sensitive by nature, Andrea believed she had become resilient over her years of practice. Her personality and nursing experience helped her to come to terms with the incident, although she still thought about it to this day. Andrea maintained her role as part-time RN and still worked on the same ward where the incident occurred.

4.2.8 Bianca

Bianca was a young EN who resided in a regional town in the South West of WA. Her work colleague shared my recruitment appeal on social media with her and she e-mailed me to arrange the interview. Bianca decided to call past my office on her way to work. She was dressed in uniform and made a very professional impression. She sincerely disclosed her reactions associated with the incident and agreeably answered all my questions. Although she did not appear upset by it, she was evidently a little uncomfortable and seemed anxious as she pulled her sleeves over her hands repeatedly and fidgeted with the strings of her jacket.

Bianca experienced a critical incident on a surgical ward five months previously. It was such a shock and she was so upset that she broke down in the hallway afterwards. She blamed herself and felt like everything was her fault. Bianca kept questioning herself if she did something wrong? Did she miss something? What else could she have done? Bianca was invited to attend a debrief session immediately following the incident with all the other team members. It was comforting to hear from the senior nurses and doctors that she did everything correctly and that she had followed the correct protocol. Although this made her feel better, she was not totally reassured by it. It was quite a traumatic experience for her. She remembered finally walking out of the hospital after a double shift and about 20 hours of being at work.

Although Bianca received the contact details for the EAP, she decided not to talk to a counsellor because she felt well supported professionally through her work colleagues and privately by family and friends. Returning to work however, made her anxious, especially for the first week or so. She was worried about making a mistake

and she did not sleep well during this time. She was also nervous that someone was going to question her actions during the event despite everyone being very reassuring and encouraging throughout the entire process. Bianca considered she had moved-on from the impact of the incident because of the support she received. She still thought about the incident and she ruminated that this was just a part of nursing. Bianca was not deterred by her experience with this incident to keep working as an EN on the same ward and felt even more determined to continued her studies and complete a bachelor degree in nursing.

4.2.9 Yolanda

Yolanda was a middle-aged RN, who resided with her husband in a coastal town in the South West of WA. She noticed my recruitment appeal on social media and expressed her interest to participate in the study. Yolanda invited me to her home and welcomed me with a cup of coffee. There was no indication that she experienced discomfort at any stage during our conversation. Yolanda was deeply moved by her experience though and she vividly remembered how the incident affected her afterwards. Her dog laid on the floor next to her chair and they both exchanged glances every now and then, as if to comfort one another. Yolanda answered my questions calmly and was very careful not to provide any identifying details about the incident, which made her hesitant in the beginning. As the interview progressed and she became more relaxed, the conversation started to flow more freely.

Yolanda had been involved in a critical incident on a surgical ward five months previously. She was disappointed in the communication between a colleague and herself after the incident and was angered by their behaviour she was confronted with. She knew she needed to speak out; it was never meant to be a personal confrontation. She was only trying to protect the patient and advocate for patient safety by adhering to organisational policy.

Following the event, Yolanda took a few deep breaths and tried to get on with the day and complete her shift. When she got home, she spent time with her family and reflected on what had happened. She felt she needed to put things into

perspective, and so she reminded herself that she was a good nurse and she knew what she was doing. This helped Yolanda to stop doubting herself and her actions and put an end to reflecting about the conversation which had occurred.

Yolanda felt uneasy for a couple of days after the incident and was nervous about returning to work. When she was on the same shift with this colleague, she was very careful about how she interacted with her. She avoided eye contact and she physically felt like she was 'walking on eggshells'. Yolanda could not trust her anymore. It took Yolanda quite a while to move-on from this incident and she 'banked' the memory of it in her repertoire of experiences as a nurse. Yolanda was planning a transfer to another clinical setting within the health care organisation before this incident occurred, but she still worked as a part-time RN at the time of the interview within the department.

4.2.10 Abby

Abby was a middle-aged RM who lived in the South West of WA. Her brother pointed out my recruitment notice in the local newspaper and encouraged her to participate in my study. Abby e-mailed me to arrange a suitable time to meet in my office for the interview. She was on annual leave at the time of the interview, which may have contributed to her relaxed demeanour. She brought with her a presence of peace and calm and she was completely oblivious of time pressure. She seemed enthusiastic about the topic of my research and appeared eager to contribute to it with her story. She pre-warned me that she may get upset and require tissues. I took this opportunity to remind her of her right to pause, postpone or discontinue the interview at any time. As Abby explained the extent of the impact the incident had on her, she shed a few tears and requested to take a short break. I reassured her, and she decided to recommence the interview after a few minutes. She settled and proceeded to answer my questions willingly and patiently. There was no further indication of uneasiness for the remainder of the interview.

The critical incident happened just as Abby commenced her night duty on a maternity ward three and a half years before. Nothing like this has ever happened to her before. This seminal event was devastating, completely unanticipated and

unconceivably sad. Everyone was distraught. Due to a lack of unambiguous communication between the health care professional team and management, Abby and her colleagues were not well informed, which led to speculations and various actions that may have been preventable.

She craved to talk about what happened and so she disclosed her experience to a colleague who knew of the situation. Abby described this opportunity as cathartic as it enabled her to start dealing with the effects the event had on her. It was suggested by her manager that she initiated contact with the EAP, which she attended but did not add value to her recovery. Overall, she did not see or hear from any of the health care organisation's managers. There was no personal 'are you ok?' offered and none of them made the effort to go to see Abby or her colleagues on the ward, although she thought this unprecedented incident would have warranted them to care compassionately about their staff.

Abby had some personal and private challenges to deal with at the time of this incident, which caused a breakdown of her usually consistent and reliable support network. She did however, receive reassurance from her family, especially her brother, and some of her colleagues, whom she trusted enough to share her emotions with. Going back to work for her was horrible. She found it difficult to go into the room where the incident happened and was reminded of it every time she walked past the specific location at work. Nevertheless, there came a time approximately six months later when Abby distinctly noticed that she could function again in the vicinity of that room without thinking about what took place. The positive, lovely feedback she received from some of the clients kept her going for now, despite the politics on the ward, the bullying traits of some of her colleagues and the sheer stress of working in such an environment. Abby tried to withstand her desire to leave the profession. She had a strong faith and considered that as the main reason why she was able to cope with life. Abby still worked on that ward, but she revealed that she did not enjoy her role as a RM anymore.

4.3 Chapter summary

Chapter four introduced the participants and brought their unique stories to life, strengthened by the integration of their own words and phrases. Although each profile was based on their individual interview, I incorporated the information I captured in my field notes and my reflective journal, as well as the narrative summaries, which were authenticated by each of the participants. Their distinct descriptions illuminated that despite the time elapsed since the incident occurred, they were still able to express the impact associated with it vividly. The participants in this study experienced a wide range of incident types, which all occurred in health care, within various non-critical care locations. Although most participants were nurses, the involvement described by the RM did contribute significantly to the phenomenon of moving-on after critical incidents. Despite the diversity within the participant group, their candid sharing of experiences illuminated the similarities of their reactions and responses both at the time and following the incidents. Also apparent within the stories were the commonalities contained in the processes and approaches displayed in response to the incidents within the health care organisations where they were employed. Irrespective of the time lapsed, nature and location of the incidents, the participants were all significantly affected by their experiences both at the time and consequently; for some lives were changed forever. This rich data which emerged from the participants' stories, shaped the major themes and sub themes which will now be presented in the following chapter five.

Chapter 5. Findings

5.1 Chapter overview

Chapter five will now present the findings which have emerged from this study. The findings address the overarching aims and objectives of my study by revealing the impact of critical incidents on the personal and professional lives of nurses and midwives and by identifying strategies employed by them to move-on from these events. I interpreted the accounts conveyed through the lens of the participants to derive meaning through patterns and themes from their experiences. This approach captured the commonalties within their subjective human experiences, while permitting the consideration of individual variation (Thorne, 2016). As a result of this collaborative process five main themes emerged from the analysis of the interviews: *(1) Initial emotional and physical response, (2) the aftermath, (3) long-lasting repercussions, (4) workplace support and (5) moving-on*. Each of these themes and associated sub-themes will be presented in this chapter and are illustrated in Appendix P.

5.2 Participant information

A total of ten female participants were included in the study. As illustrated in Table 5-1, eight participants were registered nurses (RN), one was an enrolled nurse (EN) and one was a registered midwife (RM). All participants experienced the incident they referred to in a non-critical clinical setting. The length of time elapsed since the event ranged from two months to 32 years.

Table 5-1 – Profile of research participants

Participant*	Role	Location of incident	Time since incident	Incident category
P1 - Florence	RN	Medical ward	32 years	Medication error
P2 - Lucy	RN	After hours manager	8 years	Other: Bomb threat
P3 - Erica	RN	Hospital car park	5 years	Other: Code blue
P4 - Rebecca	RN	Staff development	3 years 8 months	Other: Drug overdose

Participant*	Role	Location of incident	Time since incident	Incident category
P5 - Laura	RN	Palliative care	2 months	Other: Unexpected survival after resuscitation
P6 - Sandra	RN	Remote mining camp	5 years	Unexpected death
P7 - excluded	*RN*	*High dependency ward (met exclusion criteria)*		
P8 - Andrea	RN	Medical ward	8-10 years	Delay in recognising/ responding to deterioration
P9 - Bianca	EN	Surgical ward	5 months	Unsuccessful resuscitation attempt
P10 - Yolanda	RN	Surgical ward	5 months	Sub-standard care
P11 - Abby	RM	Maternity ward	3 years 6 months	Unexpected death

**Note: Participants were bestowed a pseudonym*

5.3 Theme one: Initial emotional and physical response

The first theme *initial emotional and physical response* illuminated the array of intense reactions unleashed by the involvement in a critical incident, which left most participants craving to share their burden with someone to reduce the impact of the event. Theme one features the sub-themes *(1) initial reaction* and *(2) sharing the burden* as displayed in Table 5-2.

Table 5-2 – Theme 1 and sub-themes

Theme 1	Sub-themes
Initial emotional and physical response	**Initial reaction** - Running on autopilot - Self-doubt and negative thoughts - Self-talk **Sharing the burden** - Veil of secrecy - Being heard

5.3.1 Sub-theme: Initial reaction

In the moment of realisation after the incident, participants described initial shock at what had happened, quickly followed by feelings of stress and disbelief. Feelings of an adrenaline surge and a reliance on professional instincts helped participants revert to automatic pilot to perform their tasks. For several participants, feelings of guilt and self-blame quickly followed, giving rise to a myriad tumultuous and negative emotions, which further complicated the realisation that the incident had occurred. Whilst one participant compared the initial reaction to *"committing heinous crime (Florence)*", others felt *"gutted"* and *"sick"*, horribly frightened and emotionally confused. Some participants also believed they had not done their job properly and felt ashamed. Without inferring blame, feelings of anger, annoyance and disappointment with other staff members who were involved in the incident arose at this time, which contributed to strained professional relationships for days afterwards. Participants also described feelings of anger with themselves, the patient or the system, combined with an incredible sadness about the futility of what had happened.

Bianca articulated this initial reaction as blaming herself: *"I was just so upset; I basically broke down in the hallway… the emotions hit me and I think it was at that point was blame. I just felt like, everything was my fault. What could I have done? Did I miss something?"*

While these all-encompassing emotions reigned, physiological reactions also manifested, such as feeling sick, shaking, palpitations, difficulty breathing, anxiety, excessive sweating, facial flushing, an over-reactive gut, loss of appetite and sleep disturbances.

Rebecca reflected that her initial reaction was: *"That was a lot of stress. But 'boom' the adrenaline, it was quite dreadful… and then the shock. My adrenaline is up here. I have sweated [laugh], I am red-faced from the adrenal response. I went and sat and was going: WHAT???"*

5.3.1.1 Running on autopilot

When the incident occurred, six participants attempted to rely on their instincts in order to switch into autopilot mode. They were able to recall how to perform the necessary tasks automatically directly after the event.

Abby explained this as: *"Yes, you are sort of going to autopilot mode, I suppose." Lucy expressed her surprise that this was possible at such a time: "But everything was like "bang, bang, bang" - this is what we do. It just all seemed to flow. I was really amazed."*

5.3.1.2 Self-doubt and negative thoughts

Overwhelming feelings of despair and self-doubt combined with loss of professional confidence and negative thoughts fuelled the stress and guilt experienced by the incident. Many participants distrusted their capability to practice and questioned if they performed their duties adequately. For five participants, confidence in their own practice plummeted. They felt like they failed themselves, their colleagues and/or their patients and feared making a mistake or harming someone at work.

Bianca vividly remembered: *"I felt like I neglected my other patients. I gave him 'my all' and I still failed him." Whereas Andrea, over eight years following the incident, admitted: "I still do doubt myself. There is self-doubt in it. When nobody is else is doing anything around you, you think, it is just me?"*

5.3.1.3 Self-talk

To ease the intensity of the emotional and physical response related to the event in this initial period, some participants used positive self-talk to alleviate the self-doubt and negative thoughts. They convinced themselves, that such an incident could happen to anyone and that they did everything within their power to achieve a positive outcome at the time.

Andrea assured herself, that she did her best: *"My strategy to myself is: You are never going to be able to save everybody. You have to accept that some people,*

you are not going to be able to save, and they will die – and all you can do is your BEST."

5.3.2 Sub-theme: Sharing the burden

Regardless of the nature of the incident, sharing the burden by telling the story at this initial stage to someone who understood the meaning of the experience was an invaluable strategy for the participants. Confiding in a colleague or close family member to *"get if off the chest (Florence)"* and receive their reassurance, they felt could help them to overcome their discomfort.

Andrea reinforced the importance of collegial support: *"Talking to colleagues, I think is one of the main things that actually cushions you and gets you over things – it's your colleagues."*

Who the story was shared with, whether a staff member who was also involved in the incident, a confidante who could be a nurse, midwife or doctor or a close family member, it was considered by the participants as cathartic to tell the story.

Abby recollected that she divulged in a peer after the incident: *"I guess that was the first way of… share and dealing with it. Because I knew that she would be wanting to know and obviously I needed to talk."*

The participants impacted by the incident described it as important to receive encouragement, comfort and support from those entrusted with their story, regardless whether it was a family member or someone at work.

Andrea received reassurance from a doctor: *"He said 'you did absolutely everything' and he said, 'I don't think the outcome would have been any different'. It was very reassuring and I think that is why he told me."*

5.3.2.1 Veil of secrecy

Despite the benefits of sharing the story, some participants were reluctant to breach confidentiality and often remained silent. They did not speak to anyone about the occurrence of the incident and suffered in solitary silence.

Rebecca was instructed to maintain confidentiality: *"So confidentiality – I did not talk to anybody, no one!"*

Two participants were actively advised by the managers of the health care organisations to refrain from disclosing the event to anyone, while another four participants could not bring themselves to divulge work related issues to colleagues, friends or family initially.

Florence remembered that she was unable to talk about how she felt after the incident: *"I didn't tell anybody, I didn't tell friends, I didn't tell a soul."*

Although the participants had access to confidential counselling services through the workplace where they could have spoken openly about their experience, not all of them felt empowered to request assistance or believed that the counselling sessions would be ineffective.

Sandra was well aware of the counselling service, however, she decided at the time not to pursue assistance: *"You can ring up the rural crisis line, but I didn't do that, but I should have."*

5.3.2.2 Being heard

Two participants thanked me for listening to their story. They perceived this interaction as therapeutic in itself that someone was interested in hearing about their unique experiences and was willing to listen to the details of their accounts.

Rebecca articulated this: *"Thank you for listening, because it is not often you get an audience that is interested enough to hear how you felt about it."* While Bianca was equally grateful: *"It felt really good just talking about it."*

5.4 Theme two: The aftermath

Theme two is *the aftermath* of the critical incident and included the sub-themes *(1) caught in the aftermath* and *(2) compelled to seek help* (Table 5-3). Following the incident, some participants not only underwent the emotional and physical response, they also found themselves caught up in the aftereffects and were eventually compelled to seek help, because they were unable to cope on their own.

Table 5-3 – Theme 2 and sub-themes

Theme 2	Sub themes
The aftermath	**Caught in the aftermath** - Fear of consequences - Enduring the investigation - Rumination - Returning to work - Triggering situations
	Compelled to seek help

5.4.1 Sub-theme: Caught in the aftermath

Many participants withstood the fear of consequences, endured an investigation and experienced situations, which triggered recall of the event. Some entered a period of rumination, where they searched for ways to reduce the impact and return to work and normality. For various reasons, participants felt anxious about a recurrence of or fallout from the incident and struggled intellectually, emotionally and physically with this. This anxiety was so severe for two participants that they reported experiencing palpitations, difficulty breathing and physical shaking when approaching the vicinity of the health care organisation.

This was described by Florence as: *"I would be heading towards the hospital and have difficulty breathing because I was in such a panic"*

Four participants also felt uncomfortably vigilant and on guard in their work place and feared their shifts after the incident.

Yolanda felt uneasy and recalled: *"I remember the next time I was on shift…, I was like walking on egg shells. Very uncomfortable"*

The effect on job satisfaction was apparent and some participants perceived their jobs as less enjoyable. They felt they were likely to lose capacity for patient care and developed a sense of hopelessness.

Abby prayed on the way to work: *"Before I go to work I just hope and pray that nothing terrible happens that day. And another 'here we go again'… kind of a dread, I suppose. I feel like how much more can I handle, how much more, you know, can anyone handle, really?"*

Three participants felt as if they had undergone a personal and professional transformation and their colleagues noticed the changes that they experienced:

"Lots of people noticed a lot of differences in me. Knowing that people were noticing made me feel worse about it. When somebody would notice, I would get flummoxed, which is another thing that I don't do very often." (Florence)

5.4.1.1 Fear of consequences

Depending on the nature of the incident, three participants feared the consequences of it. This apprehension was described as an anxiety about a formal investigation, concern over complicating work relationships and the dread of future employment opportunities being compromised as a direct result of the incident.

It was unnerving for Yolanda and she recalled: *"I was just glad to see the end of it. I just didn't want to progress it anymore in case it made things worse"*

5.4.1.2 Enduring the investigation

The investigation following the incident was considered distressing and of an interrogative nature by three participants and for some this was detrimental to their health. Due to the necessity to revisit the details of the incident because of the investigation, the emotions associated with it arose again and caused the participants to relive the event.

Rebecca described the investigation process as: *"I got interrogated about 6 months after the incident. I use the word 'interrogated' because that is what it felt like. I had the boss coming in with me and I was quite reactive. I felt so guilty and they kept going over and over the actual incident itself. In the end I was getting so confused and I was so stressed."*

5.4.1.3 Rumination

A period of rumination typically followed, where participants continuously retraced the details of the incident in their minds. These recurring thoughts were initially intrusive, occupying their thoughts day and night.

More than eight years after the incident occurred, Andrea still reflected: *"I don't know what else I could have done. I still question right now, I still question what I could have done."*

Over time, the rumination became less frequent and less intense for the participants. For some, re-thinking the details put the incident into perspective and eventually led to a positive resolution.

Erica considered herself a 'dweller' and ruminated: *"I probably reflect on things, people would say I am a bit of a dweller. I reflect on things and think how could I have done that differently and what if? If we hadn't got there, what would have happened then? I don't think that now, I did at the time. I don't think that now, because I think we did actually a really damn good job."*

Others 'over-ruminated', could not get the experience out of their minds and found themselves caught up in the aftermath of the incident for a very long time.

Yolanda reflected to her detriment: *"But I did reflect on it. I think reflection was a big thing. But at the same time, you have to know when to stop reflection, because you can keep reflecting and I tend to reflect over and over and over again to my detriment. So just reflecting back and then just trying to let it go and say 'right, ok, that is dealt with – I am a good nurse, I know what I am doing' just putting things into perspective."*

5.4.1.4 Returning to work

Resuming work after the incident was a challenging undertaking for some participants.

Rebecca found it impossible to walk back into the environment where the incident occurred four days following the incident: *"I rocked up on Tuesday and I burst into tears as soon as I got to work. I couldn't work."*

Several other participants felt anxious and nervous or found it very challenging and demanding to resume their clinical roles.

Bianca lamented: *"Coming back, I was so, so, so anxious. Those first few shifts – just anxious of stuffing up, anxious of it all coming back and hitting me."*

5.4.1.5 Triggering situations

Most participants experienced triggering situations, which reminded them of the incident and brought back recollections and emotions associated with the event. Five participants were constantly taken back to what happened because they performed specific responsibilities in their roles or worked with particular staff members who were involved in the incident, which prompted their recall.

Erica was reminded of the incident when she saw her co-worker and she explained: *"She was kind of a constant reminder of what had happened. Every time I spotted her it brought up those memories again."*

Others found it was very challenging to care for patients with similar medical conditions, in the same bed or room or under comparable circumstances. The sound of a specific noise, such as an alarm or experiencing a visual cue also provoked the unpleasant memories related to the incident.

Five years since the incident, Sandra still recalled the visual image of it: *"That just kept on bringing up the same incident all the time. It was triggering. It is just lots of little things every now and then - they just trigger"*. While Rebecca affirmed: *"There was a lot of noise. All the noise would just re-trigger the 'fright-fight-flight', phew! I was living that 'fright-fight-flight' for months."*

Over the time, some participants felt that their emotional and physical responses to triggers were reduced and they also felt more at peace when functioning in their work environment. However, two participants experienced longer lasting effects and continued to battle triggering situations, flashbacks and nightmares.

Three years and eight months following the incident, Rebecca declared: *"I still have massive triggers and flash-backs. It was a trigger that brought me straight back. Any resus situation, I get this huge massive responses where I didn't before the incident. I can't keep doing it."*

To circumvent triggering situations and protect themselves from reliving the impact associated with the incident, four participants actively attempted to avoid certain circumstances and clinical responsibilities within their roles:

"I actually avoided it where possible, which was quite hard. I mean, obviously, I still had to do it a lot of the time, but I avoided it where I could." (Florence)

Rebecca concluded that this avoidance was a way of regaining control: *"The triggers – I had to eliminate them."*

5.4.2 Sub-theme: Compelled to seek help

Despite reminding participants about the availability of an Employee Assistance Program (EAP) or counselling service, the initiation to contact the services remained the responsibility of those involved in the incident. Some participants felt overwhelmed and were unable to cope following the incident on their own. Four participants struggled with the notion of seeking help and eventually initiated contact with the EAP, where some of them required a referral to Cognitive Behavioural Therapy (CBT) and pharmaceutical treatment as a consequence of the incident.

Asking for help was viewed as a sign of weakness by Rebecca: *"Going to seek out someone to talk to, a counsellor was so de-valuing for me, for myself. It was terrible, I felt really pathetic for doing that."*

5.5 Theme three: Long-lasting repercussions

Theme three elucidated *the long-lasting repercussions* associated with the involvement in a critical incident and featured the subthemes *(1) changing career direction* and *(2) lessons learned* as presented in Table 5-4. The circumstances surrounding the event had a significant impact on their professional perception of themselves. Some participants were driven to rethink their career direction and tried to seek out the positives arising from their experience of the event.

Table 5-4 – Theme 3 and sub-themes

Theme 3	Sub themes
Long-lasting repercussions	**Changing career direction**
	Lessons learned

As time elapsed since participants were involved in the incident, from a few months to several years, their incident experience formed a distinct and enduring memory. While the memory was distant for some and more vivid for others, all of the participants were still thinking about the incident to the present day.

Thirty-two years on from the involvement in the incident, Florence declared: *"I would still think about it…, it was time as well, time was a big thing. When I think back I still cringe"*

Five participants were working through the process of trying to rationalise their emotions associated with the incident for a very long time and experienced significant consequences as a direct result. Intrusive recollections replayed in their minds, persistent insomnia and nightmares manifested and triggering situations caused some participants to relive the event for an extended period of time.

Erica recollected: *"I couldn't get the incident out of my head; it was like a video recorder playing over for many weeks."*

5.5.1 Sub-theme: Changing career direction

The impact of the critical event as well as the accumulative exposure to subsequent incidents forced some of the participants to think about changing the direction of their career. Four participants considered leaving the clinical setting where the incident had occurred.

Florence felt uncomfortable in her work environment after the incident: *"All I was thinking was, 'I can't wait to go! I can't wait to go and get off this ward.' But you know, I got to be here this is my job."*

There was a sense of relief for one participant after leaving employment at the health care organisation where the incident occurred:

"I think that was pivotal. I think if I had stayed at the ward it would have affected me for a lot longer…, I think actually removing myself from that situation, although that is not that simple, was just fortuitous. I knew I was going on the course; I stuck it out for those few extra weeks after it happened and after I settled down a touch. Starting at the other hospital was like a weight off my shoulders." (Florence)

Another two participants continued to seriously contemplate adjusting the direction of their career or leaving the profession altogether.

Rebecca made a life-changing decision: *"It was devastating, I couldn't go back, or chose not to go back to work. I chose - best choice I made in hindsight. But losing that degree??? And all my friends, colleagues, it was me and my identity."*

5.5.2 Sub-theme: Lessons learned

There was a degree of learning initiated by the involvement in the critical incident. In hindsight, learning from their experiences provided an opportunity to amend the participants' view about themselves, their professional practice and their workplace. Following a period of reflection, two participants were able to find a positive message and felt that they grew into 'better' nurses as a result. They became more alert, cautious and pedantic about certain aspects of care, which encouraged them to take their roles more seriously.

Florence learned from the incident: *"…looking back on it, I handled it very, very poorly and incorrectly. … but it did teach me a very big lesson - I think it ultimately made me a better nurse! It made me more cautious, it made me realise how easily these things happen."*

Other participants recognised what they would do differently if they were faced with similar circumstances, such as seeking help sooner and engaging in less ambiguous and more assertive communication with other members of the health care team during the event.

Laura was convinced: *"I do believe a lot of these situations wouldn't occur if good, clear, unambiguous communication occurred with people generally. I think, if people could just take the bull by the horns and actually communicate. Things need to be clearer than that. Communication needs to happen and it needs to be clear and understood. I think, if that had happened, then the situation I am talking about would not have arisen at all. It would have been different!"*

Many participants realised how important it was to pursue a meaningful work-place follow-up or seek psychological assistance to deal with lingering negative thoughts associated with their experience:

"I learned, ok - well, this does happen, this is nursing and you do need to put it away. If it is something that is affecting you really bad, I do go and debrief with the team leader, the next in line or the support department at work. If it is something really bad and still lingering on my mind day-in-day-out, then it needs further addressing." (Yolanda)

Some participants believed that the health care organisations could learn from their perspective of the incident and develop policies and guidelines, which aim to make their work environment a safer place for staff and patients.

Rebecca described the situation as: "*The pressure of time constraints on hospital wards and staff, the pressure to do, do, do. And sometimes, you actually need to slow down so that you actually don't make mistakes, because you take short cuts."*

5.6 Theme four: Workplace support

The fourth theme demonstrated the perception of participants about the various degrees of *workplace support*. Theme four featured the sub-themes (*1) caring for those who care* and *(2) unsupportive workplace* (Table 5-5).

Table 5-5 – Theme 4 and sub-themes

Theme 4	Sub themes
Workplace support	**Caring for those who care**
	Unsupportive workplace
	- Culture of blame
	- Unprofessional relationships
	- Ticking the box
	- Expected to "get on with it'

Only two participants felt well cared for in their workplace, with immediate debriefing, counselling opportunities and follow-up communication with their managers. Unfortunately, the workplace support was deemed inadequate by six participants. There was often a perceived lack of managerial support for the mental and physical well-being of the participants, who were expected to get on with their jobs and cope with the consequences of the incident on their own. Five participants feared being blamed for what happened and were exposed to strained professional relationships with their colleagues, doctors or managers after the event.

Bianca felt apprehensive about being questioned about the details of the event: *"I was anxious of someone saying something about it…, just nervous that someone was going to say something like "why didn't you do this? Why didn't you do that? I was really nervous about that as well."*

Some participants also perceived that being offered a card with counselling services was 'ticking the box' and not as effective as providing a solid support network, which included demonstrating care and understanding.

Rebecca articulated this: *"I think there could be improvements in the workplace to supporting people after incidents, even after little ones. I think there was a lack, in hind sight, when you see what happens in other areas after incidents."*

5.6.1 Sub-theme: Caring for those who care

Four participants appreciated the acknowledgement from their managers that they may feel uneasy at work following the incident and found it particularly reassuring to receive signs that they cared for their well-being by simply asking 'are you okay being at work?' This helped them to rebuild their confidence and enabled them to function within their professional roles more effectively.

Lucy valued the support she received: *"I had support of others, which was surprising I felt, from upper management, everyone came to the site. I was offered counselling immediately following the incident and I thought everything had gone well."*

5.6.2 Sub-theme: Unsupportive workplace

The feeling of the participants overall was that the level of assistance received from the workplace did not meet their needs. Two participants perceived the debrief sessions they were offered as non-genuine, while another three participants did not receive debriefing opportunities at all.

Abby was disappointed and felt that: *"The so-called 'support' given to us really was poor."*

Five participants were not awarded any recognition that they may be troubled by their emotional and physical responses, which were related to the incident and yet, they would have appreciated a simple personal 'are you okay?' from their managers and colleagues.

Laura was dismayed at the lack of support: *"No managerial input at all. No phone call, no e-mail no NOTHING!!!"*

5.6.2.1 Culture of blame

Although most workplaces operated under a 'no blame' philosophy, when it came to incidents, the fear of being blamed for what happened either in the lead up to the event or in the aftermath of it, was still real for five participants. Expressions

of guilt, anxiety and nervousness associated with receiving blame permeated their thoughts.

Laura doubted the existence of a 'no blame' culture at her workplace: *"On the management level, no. Because they will come after you if you have done something wrong. The only time I ever get phone calls from work during the week is when I have forgotten to sign something or you know, there has been something I had not done. I would never get a phone call saying 'well done for coping with that ridiculously busy shift you have just done'. No blame – I don't know?"*

5.6.2.2 Unprofessional relationships

Unprofessional relationships and poor communication channels between different members of the health care team complicated the recovery of three participants further.

Lucy reflected that: *"They are still eating their young on the wards. I heard some atrocious things. I cringe, because these are my work colleagues."*

Two participants were subjected to annoyance, anger and defensiveness of colleagues, while another three felt whispered about behind their backs. A further three participants needed to navigate the harsh and devastating reality of a bullying work environment and actively steered away from certain people during their shift.

Abby described her experience with colleagues she worked with on the ward, who were not necessarily involved in the incident: *"People cope differently, some of the colleagues; you never know what they are going to be like. They can bite your head off and they have their own battles, I suppose. Because some of them that are really moody, and they are bullies as well."*

5.6.2.3 Ticking the box

Participants who were followed-up by their manager often felt the health care organisation was just 'ticking the box', without achieving an outcome or initiating change. Five participants wanted to see something positive arise from their

experience, either to prevent a similar event happening or change current procedures and policies to improve both patient and staff safety.

Laura felt disappointed: *"I wasn't involved at all [in the incident investigation] and I would have liked that. In fact, that is a very good point because I thought at the time; it actually would have been quite nice if they had actually asked a few questions. Those that were changing the protocol or whatever you want to call it. If they could have actually asked my point of view, I think that would have actually helped me a lot to think somebody else is going to benefit from this experience".*

Additionally, as part of an incident follow-up, it was standard practice to offer the contact details to the EAP or other form of counselling service to those affected by the incident.

Abby was dissatisfied: *"I wasn't happy…, well none of us were happy with our superior people. We were just not happy with the so-called support. They just say the usual, which is 'make use of the EAP system', which is obviously what I ended up doing. I ended up following that through. I did it for myself."*

Many participants perceived this procedure as insincere, because they felt left to deal with the aftermath of the incident on their own. Four participants felt helpless in making the decision to self-refer to the EAP and would have preferred for someone to take over and arrange counselling for them.

Rebecca explained this situation: *"They gave me a card, the EAP. 'Here ring this if you need'. Like that – psychological insult!!! In hindsight, I was not in any fit state to make a decision to ring up the number. I would have liked someone to actually seek me out. I wouldn't have said no."*

Four participants had to overcome barriers, such as feeling like a failure for requiring counselling or the previous experience of unhelpful EAP sessions related to other incidents. These feelings were further complicated by considerable waiting times to see a counsellor. One participant was told, unless she was suicidal or self-harming, she needed to wait for two weeks for an appointment.

Rebecca advocated for mandatory counselling: *"You have been involved in a critical incident, it is out of the norm of your workspace, and you must go. It is like they do with the cops and stuff. Some of the things you have to go through before you can go back to work."*

5.6.2.4 Expected to 'get on with it'

Despite the focus on safety and quality in health care, involvement in critical incidents presented the reality for the participants employed in non-critical care settings. They were often expected to 'get on' with these difficult and challenging experiences, as there seemed a preconceived acceptance that such exposure to adversity formed part of a health care professional's job description.

Andrea remembered: *"I got told one night just to get on with it. Just get on with it, will you!"*

Seven participants felt it was the expected norm that they coped with incidents; not only from the health care organisation's perspective, but also from their own, that of their colleagues as well as their family and friends. It was furthermore anticipated that the participants remained calm and functioned under pressure, no matter how it affected them afterwards.

Sandra put this expectation into words: *"Well, they just expect that nurses get on with things, don't they? Because we are 'copers' and we can do things. We are very good at pretending we are ok, even when we are not. As I said, you cope with that at the time, and then you freak out afterwards!"*

5.7 Theme five: Moving-on

The theme *moving-on* from the involvement in a critical incident reflected that moving-on did not mean to forget about what happened. All participants remembered the events very well, however, they learned to accept what happened and continued to live their personal and professional lives, whilst trying to achieve a balance between the two.

This was illustrated by Florence after 32 years following the incident: *"I have moved-on, but you never forget it, you never forget it!"*

The final theme *moving-on* illuminated the subthemes *(1) moving-on* and *(2) balancing life* and are presented in Table 5-6.

Table 5-6 – Theme 5 and sub-themes

Theme 5	Sub themes
Moving-on	**Moving-on** - Equipped to cope - Helping myself - Taking time to get back on the horse - Maintaining clinical role **Balancing life** - Exercise - Controlling unhealthy habits - Creating a physical distance

5.7.1 Sub-theme: Moving-on

The majority of participants affirmed that they have moved on entirely and maintained their clinical roles by using adaptive strategies detailed below, such as feeling equipped to cope, helping themselves and taking their time to 'get back on the horse'.

Laura recalled: *"I mean I don't feel devastated by it now, you know. I did at the time, but I have moved on."*

On the other hand, two participants found they were still caught-up in the aftermath and continued to fight for internal peace in an attempt to overcome the repercussions of the critical incident.

Rebecca divulged three years and eight month after the incident: *"I have survived very well, I still have a few issues. I have moved-on, but still got the consequences. I still haven't quite gotten over it because I still think of it. Yeah, I still think about it!"*

5.7.1.1 Equipped to cope

Four participants viewed themselves as capable to manage difficult situations in their life and were able to navigate the aftermath of the incident more easily, while maintaining their professional clinical roles.

Laura explained: *"I think that is a personality thing as well. I think you might find different nurses react to different situations in different ways and different people have different coping skills."*

On the other hand, one participant felt not adequately trained for the particular incident type. Another participant dealt with problematic personal circumstances at the time, which compromised her usual coping mechanism.

Abby described her situation: *"A lot was happening also in my private life and just the total breakdown of my relationship. I lost a lot of weight and actually went too slim. I got depressed and I had trouble getting out of bed. I would stay in bed, you know and I just wasn't eating. I took probably a year at least, maybe a bit longer to get back to my proper good health again and my proper weight."*

Feeling 'equipped to cope' was a very individual experience. The four participants, who attempted to maintain a healthy diet and exercise regime and were generally happy in their personal and professional lives, were in better position to deal with the impact of the incident.

Lucy felt equipped to cope: "*So I just feel like I am quite well equipped to deal with that and I say if we go back there, I was reasonably fit. I exercised and I would eat properly. Had a pretty good balance in my life, happy – yeah."*

In addition, two participants mentioned their resilient personality, which gave them a more positive outlook. They felt more adept to overcome the emotional and physical responses evoked by the incident.

Andrea believed: *"I think because of my experience and my personality perhaps, I coped. And maybe I wouldn't have done if I had somebody else's."*

Together, these traits of feeling 'equipped to cope' lead to the subjective perception of self-efficacy, which may be a determining factor in how well participants could move-on from a critical incident.

Laura was convinced: *"So it is learning coping skills, I think. And some people are just more equipped and more adapt."*

5.7.1.2 Helping myself

Despite attempts to erase the incidents emotions that often accompanied their memories, many participants could not completely dismiss what took place. They were seeking ways to help themselves and found it an effective coping strategy to shift their focus on something else.

Rebecca was searching for ways to help herself: *"Why can't I fix this myself? I was totally into self-help. You have got a problem? Ok, what can I do to make it better? And I couldn't?"*

While some participants were deliberately looking for new priorities to concentrate on, others unintentionally transferred their attention towards different areas of their lives. One participant started to write poetry and painted, another read self-development books or relied on her strong faith for support. General stress management strategies were also valuable, such as deep breathing, mindfulness, meditation and spending time in nature.

Laura described her strategy as: "*You can't just block it out totally. As I said, for about the first 48 hours. After that, if you are a busy person, you tend to start focusing on other things anyway. Something else has become more important to me as an individual to be focusing on. My thought processes always are, 'ok – what else have I got to do today when I leave this shift, because that is now what I am focusing on'. I find it very necessary, otherwise, you carry that with you and it can affect everything. You know, your friendships, everything if you are in a miserable mood. Life is too short."*

5.7.1.3 Taking time 'to get back on the horse'

Getting back on the horse proved to be a challenging undertaking for several participants.

"My philosophy was, if you fall off the horse – get back on it. Tough it out princess! I could not get back on the horse. The horse kept bucking me off. I had to find a different horse to get on. And I have, I think" explained Rebecca.

Five participants were able to go straight back to work, while the other five of them struggled and required more time to heal their grief and sadness and thus enable themselves to function again.

Florence felt that letting time pass helped her: *"It was time as well, time was a big thing. But I mean you know, when I think back I still cringe."*

5.7.1.4 Maintaining clinical role

Although the involvement in a critical incident had left a long lasting memory and permeated their professional self-perception, most participants maintained their clinical roles, at the time of the event. Two participants made modifications to the clinical setting they worked in to circumvent triggering recollections of the incident, while others loved their roles and their current environment and decided to stay despite adversity.

Lucy decided to maintain her clinical role: *"I didn't move out of that area because that is an area I love working in"*

Maintaining their clinical role was not straightforward for all participants; two of them began to struggle and anticipated leaving the profession completely.

Three years and six months following the incident, Abby disclosed: *"It is really depressing working there, it seriously is. I still work there. Mad, hey [laughs]. I have my own personal reasons for why I am staying put. Well, I thought about leaving obviously, but it is not right at the moment. It will happen, I am at the winding down of my career as midwife and nurse."*

5.7.2 Sub-theme: Balancing life

Achieving a balance in life was considered by participants as an important mechanism to move-on and maintain their clinical roles. Although highly individual, most participants engaged in exercise and physical activity. While others learned to take care of themselves through various forms of self-care, such as mindfulness, meditation, spending time with family and friends in a supportive environment and controlling unhealthy habits.

Five months after the incident, Bianca described that: *"I am just trying not to be too burnt out at work. I definitely look after myself a bit more, like trying not to get burnt out at work."*

These strategies, as well as taking regular leave at work, allowed some of the participants to create a distance and focus on something else to distract their minds and avoid dwelling on issues that happened at work.

Rebecca engaged in mindfulness: *"That is really the best strategy, to breathe slow and deep, use your tummy and not your chest. Taking time out for myself and allowing, giving myself permission to take time out. Not having to do or be all the time. And that was difficult."*

5.7.2.1 Exercise

Engaging in various forms of exercise was a helpful means of releasing workplace related stress for eight participants. One participant joined a gym and took part in various forms of exercise classes, while another participant considered the integrated body and mind through yoga. Some participants engaged in physical activity outside, such as walking with friends or pets, chopping wood and gardening or bike riding.

Laura gave details about her strategy: "*I exercise well. I would say definitely. Simple things like walking with my friends and their dogs. I find that is probably one of the most relaxing things I can do. So yes, without a doubt, that is a strategy that helps me."*

Lacking the energy and motivation to engage in exercise was challenging for one participant to overcome at times. However, as workplace related tension tended to dissipate during and after exercise, the benefits of it became evident.

Erica reported: *"I still use exercise as a way of relieving stress."*

5.7.2.2 Controlling unhealthy habits

An increase in alcohol intake to mellow, settle and cope after work at the end of the day or overindulging in certain foods such as sweets and chocolate, became a noticeable habit for two participants. Gaining control over such unhealthy and potentially harmful behaviours was an empowering way to improve their level of well-being and contributed to achieving a balanced life.

Erica openly confessed: *"I noticed I quite liked a glass of wine or two after work or at the end of the day. And then I was saying, I am drinking more and I noticed that this is not healthy."* While Abby admitted: *"Just eating too much chocolate. I just eat the whole block. I can just eat the whole thing in one sitting, just you know, all that sweet stuff. I don't drink alcohol and I don't smoke. If I did, I probably would have, could have become an alcoholic [laugh]."*

5.7.2.3 Creating a physical distance

Remaining at work immediately following the incident and performing the duties required was taxing for three participants. They found it difficult to concentrate on the everyday responsibilities of their jobs, because they were preoccupied by thinking about the incident, felt uneasy around a particular staff member or were simply exhausted.

Erica recounted: *"It was only after when I had to go back to work and I had another 6 hours to work. It was like, oh my God, you know, what if, what if, what if, what if, like that. And I had the whole afternoon to work. And I couldn't get the incident out of my head. I couldn't get the face out of my head, you know, the blue face. The fact that we saved her, you know, that I was wondering if she was going to be all right. And I had to work the rest of the shift with that on my mind."*

Having time off, even just a few days, created a welcome physical distance between the second victim and the place where the incident occurred and aided in moving-on from the event. This space occurred either as a result the rotating work roster or by taking or receiving sick leave for a day or more. Depending on the work roster, some participants chose their rostered days off, which allowed space to *"shut the brain down for a little, Bianca"* or have a break. Three participants received no break and were reluctant to commence their rostered shift the very next day.

Yolanda recalled: *"There was no specific leave or anything. It was difficult and I was nervous."*

Two participants described that taking regular breaks, such as annual leave or long service leave, further provided an appreciated distance from the exposure to incidents and balanced the general workplace stress.

Abby is taking regular leave: *"I just want smaller amounts more often, because it is so stressful at work. I don't want to work too long without having a break."*

5.8 Chapter summary

This chapter has presented the findings from my study. One of the most significant of these was that despite a significant period of time elapsing since the incident occurred, the ten participants were still able to vividly describe the impact associated with it. Irrespective of the type or location of the incident, several congruent short and long-term effects came to light. During the initial emotional and physical response, a range of intense reactions arose and participants experienced feelings of shock, stress and disbelief, initiating professional instincts to operate on automatic pilot. Soon after, tumultuous negative emotions manifested, such as guilt, self-blame and self-doubt, which accompanied the loss of professional confidence. Most of the participants desired to share their burden with someone who understood the meaning of their experience. However, a veil of secrecy to maintain confidentiality prohibited some participants to speak about the incident and many found themselves caught in the aftereffects of the event. Whilst some participants

feared the consequences of the incident, others endured a distressing investigation. Rumination and triggering situations complicated their function within their clinical roles and led some participants to re-think the direction of their career. The participants conveyed various unsupportive workplace behaviours, as well as a preconceived acceptance that nurses and midwives were expected to 'get on' with these exposures at work. These workplace practices compromised their recovery and convoluted the reclamation of their professional competence. Several adaptive strategies were identified, such as achieving a balance in life by taking care of their own physical and mental well-being, controlling unhealthy habits and taking regular leave from the workplace. These measures aided in the post-event recuperation and enabled the participants to ultimately move-on from their experiences, although the journey was often long and troublesome. While all participants considered that they moved-on from their experiences, some were able to continue to thrive within their profession and clinical role, while others began to struggle and felt compelled to look for an alternative solution. The interpretations have been captured in five main themes *(1) initial emotional and physical response*, *(2) the aftermath*, *(3) long-lasting repercussions, (4) workplace support* and *(5) moving-on*. The findings from this study are deliberated in the succeeding discussion chapter six and comparisons made to the contemporary literature.

Chapter 6. Discussion

6.1 Chapter overview

Chapter six will now discuss my findings in relation to the scholarly literature and situate the results of my study within previous research. The experiences and insights so candidly shared by the nurses and midwives, the participants of my study, have contributed to a growing body of research into the second victim phenomenon. Almost two decades ago, the physician Wu (2000, p. 358) introduced the term "second victim" to draw attention to the consequences which health care professionals endured when involved in critical incidents. Since then, this phenomenon has been explored within various professional groups to reveal the consequences and repercussions of critical incidents on those who provide care for others, with the aim to develop adequate support. The term 'second victims' was not widely recognised amongst nursing and midwifery practice and sharing the use of this terminology may change the way health care organisations think about and manage this phenomenon in the future. Clinical areas of ICU, ED and ambulance services were predominantly represented in the literature. Some of the findings of my study have been echoed in previous research, however, little was known about the experiences and perceptions of nurses and midwives who became second victims in the course of their work on the outskirts of those more comprehensively studied professions and clinical settings. The findings of my study revealed new and previously unshared insights into their experiences and perceptions and explored the concept of moving-on after the involvement in critical incidents. One of the most significant findings from this study was that despite the widely acknowledged need for support to overcome the impact of critical incidents, the assistance the participants of this study received from the workplace, was repeatedly perceived as inadequate, which resonated strongly within the contemporary literature (Kable & Spigelman, 2018; Rinaldi et al., 2016). The participants of my study depicted a positive outlook in life and acknowledged the importance of a work-life balance in alleviating the responses to the profound and enduring impact of critical incidents, which was not previously

explored in association with critical incidents. In this chapter, I will firstly capture the nature and impact of critical incidents, followed by a brief overview of the findings. I will then go on to discuss each of the main themes and sub-themes in detail and draw in and discuss the connection with previous scholarly research.

6.2 Nature and impact of critical incidents

The findings of my study revealed that irrespective of the type of incident, the personal and professionals implications associated with it were comparable. The impact that critical incidents have on health care professionals, including nurses and midwives, has been well documented (Austin, Smythe, & Jull, 2014; Jones & Treiber, 2017; Mayer & Hamilton, 2018). There are discrepancies within the existing the literature, which estimates the number of second victims from one in seven (Clancy, 2012), to up to half of all health care professionals at some point in their professional careers (Jones & Treiber, 2017). There is evidence which suggests that events which arise from clinical errors or those which were emotionally charged, created a more significant impression on those involved (Pratt et al., 2012). Other studies have however identified that any type of incident had the potential to impact on the most resilient health care professionals (de Boer et al., 2011; Healy & Tyrrell, 2011; McCool et al., 2009).

It is a professional mandate that nurses and midwives and other health care professionals protect patients from harm and anticipated adversity, but incidents are not always preventable (Jones & Treiber, 2017). They occur as a result of human error, equipment failure (Arfanis & Smith, 2012), medication errors or sub-standard care (de Boer et al., 2014; Jones & Treiber, 2017). However, incidents may not necessarily originate from errors, such as unsuccessful resuscitation attempts (de Boer et al., 2014), violent trauma, death of a child (Healy & Tyrrell, 2013; Mayer & Hamilton, 2018), sudden infant death syndrome (Theophilos et al., 2009) maternal or neonatal mortality (McCool et al., 2009), as well as serious injury to a colleague or known victim (Mitchell, 2015). Since the nature of critical incidents was decidedly subjective, it must be recognised that although one person may deem an event as critical, it may not be considered critical by another (Mayer & Hamilton, 2018). The

associated impact with any type of health care event, unexpected or not, arising from error or not, has the potential to bring about a second victim response and was therefore comparable (Scott et al., 2010). However, the personal and professional disruption experienced by second victims has been identified as subjective and a "one size fits all" discipline-specific approach must be cautioned (Harrison et al., 2015, p. 32). Therefore, I acknowledge that the effects critical incidents had on nurses and midwives might be perceived as different in comparison to other health care professions. My discussion chapter includes literature and previous research that involved physicians, surgeons, paramedics and other health care professionals, because of the potential learning arising from their shared experiences of becoming second victims and the mutual feelings of self-blame as well as compromised professional self-esteem (Grissinger, 2014; Jones & Treiber, 2017). What critical incidents did have in common between the types of incidents and across professions, was that they were often associated with devastating and overwhelming circumstances for those involved in them, leaving the health care professionals to find ways to cope with the aftermath in order to return to emotional, cognitive and professional functioning (Powers, 2015). Whilst I recognise that the type of critical incident and the experiences associated with them may be diverse, I chose to discuss my findings in relation to the current second victim literature. After a thorough review of the literature, I reached the conclusion that so much can be learned from second victims despite the heterogeneity of their discipline or the genre of incidents.

6.3 Summary of my findings

The findings of my study stemmed from my interpretive description (Thorne, 2016) of the data derived from in-depth interviews with nine nurses and one midwife who agreed to contribute their experiences and perceptions related to critical incidents. Due to geographical distance, I conducted one of the interviews via videoconferencing technology, which provided equally rich data in terms of ability to capture the nuance in vocal tone, facial expression and non-verbal behaviour, which revealed a novel, modern and innovative method of data collection. The participants of my study confirmed that critical incidents have a significant impact on nurses and

midwives although they were not employed in ICU, HDU or ED. All of the study participants recalled and discussed the experiences related to the event in great detail. Although workplaces had systems in place to provide assistance after incidents, the participants often perceived this support as insufficient and inadequate. The participants described that the personal and professional impact of incidents was harsh and enduring and that organisational management and the workplace culture surrounding these events, had a positive or negative influence on their recovery and future practice. Participants emphasised the importance of collegial support and shared many coping strategies and self-care approaches with me, which aided their emotional healing and restored their professional capacity. Above all, achieving a work-life balance and leading a healthy and happy life contributed to a more positive outlook and equipped some of the participants with the skills to survive and thrive again in the clinical setting. I will now discuss the findings of my study in detail and situate each of my themes and sub-themes within the body of scholarly literature.

6.4 Initial emotional and physical response

The first theme of my study revealed that the involvement in a critical incident unleashed an array of intense physiological and emotional reactions, which gave rise to a myriad powerful negative emotions and feelings of unyielding stress and disbelief. Consistent with theme one of my study, the intensity of the initial emotional and physical response following involvement in such an event has been reported by many second victims (Mayer & Hamilton, 2018; Rinaldi et al., 2016). Nurses who participated in a survey related to medication errors described feelings of penetrating emotional distress, self-blame, shame and guilt (Jones & Treiber, 2017). A group of nurses, physicians and chaplains of an American study which explored the impact of critical incidents, compared their experiences to a ship "navigating the tumultuous sea" as severe reactions, deepened by disbelief, sadness and exhaustion engulfed them (Mayer & Hamilton, 2018). Italian nurses, midwives, and physicians who took part in a study that explored the path to recovery after becoming a second victim described emotions of comparable intensity such as

remorse, frustration and anger (Rinaldi et al., 2016). Similar to the participants of my study, many other second victims felt so consumed by the shock of the event, that they also experienced physical symptoms, such as nausea, vomiting (Jones & Treiber, 2017), tachycardia, anxiety, profuse sweating and difficulty breathing (Mayer & Hamilton, 2018; Rinaldi et al., 2016). Some of these physical symptoms persisted beyond the initial impact and had the potential to lead to ongoing fatigue, sleep disturbances and depression (Mayer & Hamilton, 2018; Rinaldi et al., 2016).

More than half of the participants of my study mentioned that initially, they relied on their nursing and midwifery instincts to remain functioning in their professional capacity despite the intense emotional and physical reactions they experienced and compared it to 'autopilot' mode. Previous research reported that midwives and nurses involved in adverse labour and birth events had to suppress their initial intense reactions to respond professionally in the wake of these high stress situations and presented a calm facade despite their inner turmoil (Elmir, Pangas, Dahlen, & Schmied, 2017, p. 4196). This phenomenon has also been observed in ambulance nurses, who reported the adrenaline rush induced by the urgency of the situation precipitated a chain of reactions, which enabled the need to function despite the extreme initial emotional and physical response to the incident (Bohström, Carlström, & Sjöström, 2017).

The distressing nature and the negative thoughts resulting from the involvement in a critical incident caused many of the participants of my study to doubt their professional capabilities and question their clinical competence. This as a sub-theme which reverberated strongly in the literature as a common experience of second victims (Rinaldi et al., 2016; Ullström et al., 2014). Jones and Treiber's (2017) survey revealed that nurses felt incompetent and anxious at work for years after the event and Mayer and Hamilton (2018) reported about the self-doubt and insecurity which led to feelings of inadequacy. A Swedish study that investigated the effects of adverse events on physicians, nurses and allied health care professionals also reported diminished professional performance and doubt related to clinical judgment and decision-making (Ullström et al., 2014).

To alleviate the intensity of the initial reactions and the associated self-doubt, some of the participants of my study tried to convince themselves that such an incident could have happened to anybody and that they did everything they could to achieve a better outcome in the given situation. This type of self-talk was described as a defence mechanism among French physicians and nurses who experienced a medical error in ICU (Laurent et al., 2014). Laurent and colleagues (2014) reported that 50% of the caregivers who contributed to their study, which explored the psychological repercussions of errors in ICU, rejected the responsibility associated with the incident and emphasised a team error related to professional practice, rather than the individual aspect. Contrary to the participants of my study, the contributors of the French study consciously refused to let themselves feel negative emotions such as guilt and shame, because they believed these emotions to negatively influence the quality of their work (Laurent et al., 2014).

The form of inner dialogue or self-talk was insufficient for the majority of the participants of my study as they preferred to confide in someone to share their burden. They found it an invaluable strategy to unburden their heart and entrust someone who understood the meaning of their experience, such as a colleague or a close family member. Regardless of the nature of the incident, they perceived it as cathartic to tell their story to free themselves of their emotional load and receive reassurance and encouragement from a confidant. The benefits of storytelling as a therapeutic process following traumatic experiences has been well established in the trauma literature (Donaldson-Andersen, 2017; Ewens, Hendricks, & Sundin, 2018; Nurser, Rushworth, Shakespeare, & Williams, 2018). Although the desire to tell one's story may develop for many reasons, sharing it helped to maintain or gain a sense of identity and was positively linked to improved coping and recovery (Hsieh, Hung, Wang, Ma, & Chang, 2016; Moya & Arnold, 2012). The need for affiliation and the importance of informal peer support resonated in the literature surrounding the second victim phenomenon (Mayer & Hamilton, 2018; Rinaldi et al., 2016). Coherent with the findings of my study, many second victims mentioned that they actively sought informal support from co-workers to talk about the incident and receive

reassurance, validation and normalisation (Mayer & Hamilton, 2018; Ullström et al., 2014).

At the same time, a 'veil of secrecy' was described by the participants of my study, which came about for various reasons. Some participants felt reluctant to speak out for fear of breaching patient confidentiality, others felt incapable of divulging work-related issues to an uninvolved colleague, family member or friend, and some were actively advised by their employer to refrain from disclosing any details of the incident. Rinaldi and colleagues (2016) mentioned that some of the participants of their study did not know how to ask for help and to whom to turn, which contributed to a concept of 'suffering in silence' described by Ullström et al. (2014) in their Swedish study that investigated how health care professionals were affected by adverse events. Their findings suggested increased difficulties with coping after the event if those involved were not able to share their experiences with others (Ullström et al., 2014).

A UK study that investigated the attitudes of doctors, nurses and allied health professionals towards patient risk and safety issues in acute care similarly reported that organisational investigations prevented practitioners from speaking out (Arfanis & Smith, 2012). The choice not to confide in anyone was also explored in a literature review that evaluated the adverse effects unintentional errors had on the medical personnel involved (Robertson & Long, 2018). A culture of perfectionism was identified to be a contributing factor to remaining silent despite the desire for support (Robertson & Long, 2018). Robertson and Long (2018) concluded that when errors or adverse events occurred, physicians typically felt blamed because they were the primary decision maker in the care of patients, which singled them out and damaged their inner perfectionism. Their assumptions necessitated a stance of denial and a "code of silence" that inhibited the discussion of errors in a blame-free and safe environment (Robertson & Long, 2018, p. 407).

In summary, the discussion of the first theme of my study revealed that the widespread impact of the initial emotional and physical response to a critical incident can be far-reaching and under recognised (Elmir et al., 2017; Jones & Treiber, 2017;

Mayer & Hamilton, 2018; Rinaldi et al., 2016). To enable nurses, midwives and other health care professionals to share their burden of self-doubt and negative thoughts related to the incident, the veil of secrecy must be lifted (Robertson & Long, 2018; Ullström et al., 2014).

6.5 The aftermath

The second theme of my study indicated that shortly after the initial reactions stabilised, the participants found themselves caught up in the aftermath of the critical incident, where intense feelings and emotions gave way to a cycle of self-evaluation and speculation of how the health care organisation would react to the critical incident. They encountered fear of consequences, withstood enduring investigation and came to terms with returning to work, all whilst actively trying to avoid situations, which triggered recall of the event. Similar perceptions were reported by Scott and colleagues (2009) in an exploration of the recovery of second victims in America, where nurses and physicians contemplated repercussions of the event that affected their job security, registration to practice and potential litigation. These fears were confirmed by Rinaldi and colleagues and were experienced by the participants of their Italian study as they realised the severity and seriousness of the incident (2016).

The nature of the organisational investigation was described by some of the participants of my study as interrogative, distressing and detrimental to their health, primarily because they were requested to revisit the details of the event, which gave rise to the emotions they associated with it. Previous research confirmed this re-awakening anxiety was due to the threat of litigation and institutional inquiry (Currid, 2009; McCool et al., 2009; Scott et al., 2009; Ullström et al., 2014). Concerns were set in motion soon after the event and once the formal investigation commenced, health care professionals began to grasp the extent and gravity of the event (Scott et al., 2009). These disturbing concerns were amplified by the apprehension that the repercussions could lead to termination of employment (Scott et al., 2009), loss of livelihood, defamation or humiliation (McCool et al., 2009). Participants in a study of mental health nurses in the UK found it difficult to ‘switch off’ at the end of their shift,

driven by the fear of an increasingly litigious climate (Currid, 2009). A lack of awareness of the potentially lengthy investigative procedure, combined with a lack of organisational follow-up, further extended the time of emotional recovery and psychological closure for the health care professionals who contributed to a Swedish study of the effects of adverse events (Ullström et al., 2014). The associated legal and confidentiality considerations also hindered any opportunities for emotional support by inhibiting the disclosure of incident details to colleagues or family members (Scott et al., 2009). Thus, this literature supported the findings of my study by stipulating that insensitive managerial inquiries and the confidentiality constraints associated with investigative procedures, further contributed to the veil of secrecy experienced by many second victims who would benefit from sharing their emotional and professional burden associated with their experience.

A period of rumination was referred to by several participants of my study, when thoughts about the incident would occupy their mind day and night. With time, this rumination became less frequent and less intense, however, the risk of over-ruminating was stated by some participants. Comparable to the findings of my study, the group of nurses, midwives and physicians who contributed to an Italian study which explored second victims' pathway to recovery, recounted repetitive intrusive memories as one of the most commonly referred to psychosocial symptoms after the event (Rinaldi et al., 2016). Many health care professionals mentioned that they repeated the sequence of events in their mind over and over again (Ullström et al., 2014). On the other hand, a group of paramedics who participated in a study that explored experiences and coping strategies related to critical incidents, found it a helpful coping strategy to review and reconstruct the event (Avraham et al., 2014). The literature surrounding rumination and reflective thoughts (Avraham et al., 2014; Rinaldi et al., 2016; Ullström et al., 2014) suggested, that the insightful period described by the participants of my study, may initially be helpful in coming to terms with the event, however, if thoughts became intrusive and persistently brought about the negative emotions associated with the event, the experiences of the impact may be prolonged and complicate performance at work.

Returning to work after the critical incident was demanding for some of the participants of my study. They described anxiety and vigilance related to the aftermaths, and experienced palpitations, difficulty breathing and physical shaking when approaching the vicinity of the health care organisation. Although most of the health care professionals interviewed by Ullström and colleagues (2014) continued their work as they had before the incident, one third explained how the emotional reactions made their work more challenging. The participants of my study reported that they actively avoided various triggering situations, which reminded them of the emotional reactions of the event and resulted in flashbacks and recurring nightmares. There was limited published research within the disciplines of nursing and midwifery which described the specific implications of returning to work after critical incidents, however, the available evidence describing the long-lasting repercussions of involvement in critical incidents, which complicated the return to work, are addressed later in this chapter. Parallels can be drawn between the experiences of emergency personnel who participated in an American study and the findings of my study (Mishra et al., 2010). The medical emergency technicians and paramedics reported that they actively avoided activities which reminded them of the incident. When they returned to work they were on guard, they experienced hyper arousal and displayed hyper vigilant behaviours, as well as impaired functioning, which indicated that the work-related stress caused difficulties on the job (Mishra et al., 2010).

Some participants of my study felt overwhelmed, were unable to cope on their own and were compelled to seek help. Although they were aware of the free counselling service available to them through the Employee Assistance Program (EAP), they reported difficulties with initiating contact. One of the participants found it de-valuing that she needed to seek external professional assistance and viewed it as a sign of weakness. It is a common perception of second victims that they are expected to be 'tough' and handle incidents as if they were just a standard part of the job; difficult to acknowledge that they were struggling with the impact of the event for that reason (Mayer & Hamilton, 2018; Rodriquez & Scott, 2018). Yet many participants of my study reported it was a standard workplace practice to be offered

contact details to the EAP or other form of counselling service and they often perceived this gesture as insincere, preferring instead for their managers to assist them in arranging counselling for them. Analogous to the findings of my study, in America where employee support programs were available in many health care organisations, the uptake of the service was largely dependent on the initiative of the individual and an automatic referral system was also not in place (White et al., 2015). Health care risk managers explained that without an official referral system, health care professionals encountered a general reluctance to overcome the barriers to accessing the services because of concerns related to confidentiality, negative peer judgment, time off work and fear that their personal support history would appear in their employment record (White et al., 2015).

Some participants of my study described similar barriers related to the uptake of counselling services such as feeling like a failure for requiring counselling, previous experiences of unhelpful EAP sessions or considerable waiting times to see a counsellor. Comparable observations were described by Ullström and colleagues (2014) in Sweden where although professional assistance for second victims was available, one of the doctors reported difficulties and inner resistance to seek external help after an operation went wrong. The reluctance to access post-incident support systems has been identified in paramedics as well (Halpern, Gurevich, Schwartz, & Brazeau, 2009). A group of researchers interviewed Canadian ambulance workers about the emotional outcomes and the implications for interventions after critical incidents and reported significant barriers to accessing support services. Halpern and colleagues concluded that ambulance personnel struggled to acknowledge the emotional distress within themselves and feared the stigma attached to revealing their vulnerability to others (Halpern et al., 2009). Their findings supported the perceptions of the participants in my study, who also identified that it was key to recognise the emotions evoked by the incident and suggested that the organisational culture, which tended to stigmatise vulnerable feelings, was unhelpful in fostering an understanding that normalises the uptake of support services. In summary, the discussion of the second theme highlighted that the seriousness of the aftermath in the wake of critical incidents was largely underestimated and under-

supported (Currid, 2009; Rinaldi et al., 2016; Ullström et al., 2014). Nurses, midwives and other second victims were compelled to seek help as they worried about consequences and unpleasant investigations. Dealing with reflective thoughts and trying to circumvent triggering situations when returning to work was a challenge (Halpern et al., 2009; Mayer & Hamilton, 2018; White et al., 2015).

6.6 Long-lasting repercussions

The third theme of my study described the long lasting repercussions as the participants tried to rationalise their emotions associated with the incident. They told their story of the event for an extended period of time and described persistent intrusive recollections that replayed in their minds. Rinaldi et al. (2016) confirmed that although the onset of emotional and physical symptoms was reported by the participants of their study as immediate following the incident, the duration of these symptoms lasted for a prolonged period of time and were still present for some of the participants years later. Similarly, the findings of a meta-ethnographic analysis of midwives' and nurses' experiences of adverse labour and birth events synthesised the results of 11 qualitative studies and reported the lasting impact of incidents with the theme, this "adds another scar to my soul" (Elmir et al., 2017, p. 4194). The midwives and nurses of the studies which Elmir et al. (2017) included in their review conveyed that they were haunted by the event for years, and described re-experiencing the circumstances related to the incident during subsequent births, elicited by the similarity of the sounds and situation (Elmir et al., 2017). Further compounding these lingering repercussions was the re-traumatising nature of recreating the event as a result of litigation and subpoenas to testify in court (Elmir et al., 2017). For some of the midwives and nurses included in their meta-ethnographic review, time did not ease their memory of those events, on the contrary, many reported that their memories became more lucid and powerful as time went on (Elmir et al., 2017).

In my study, the time elapsed since the incident varied for the participants from a few months to several years; however, their experiences formed distinct and enduring memories. While the recollections were distant for some and more vivid for

others, all of the participants were still thinking about the incident to the present day. Critical incidents have been described in the literature as life-changing events that have the potential to form a permanent imprint in the memory of those involved in them (Dekker, 2013). Consistent with the participants of my study, the nurses and physicians who took part in an American exploration of the personal and professional impact of critical incidents on health care professionals, recall of the incident occurred with great detail regardless how much time passed since the incident happened (Mayer & Hamilton, 2018). An investigation into the wellness of American surgeons revealed, that this undeviating imprinted memory led to such despair, they compared the experience to feeling "enveloped in a dark cloak", which engulfed their personal and professional lives (Marmon & Heiss, 2015, p. 316), to such an extent that some became more likely to contemplate suicide (Shanafelt et al., 2011). "Suicides are the tip of the iceberg" for second victims was suggested in a workforce leadership summary after a UK-wide study of suicide by health care professionals involved in serious incidents revealed significant consequences (Madhok, 2014, p. 26). The author concluded that more needs to be done to address the psychological impact among care givers to prevent such despair (Madhok, 2014). Although comparable data related to suicide is scarce for nurses or midwives, the story of Kimberly Hiatt illustrated a grave outcome brought about by a critical incident. She was involved in a medication error that led to the death of a young child, and became increasingly depressed and professionally isolated to the point where she lost all hope and took her own life (Saavedra, 2015). Although none of the participants of my study disclosed any suicidal ideation, the permanency of the memory related to the incident, as well as the accumulative nature of the exposure to subsequent events, drove some them to consider changing the direction of their careers as a defence mechanism, which will be discussed later in this chapter.

My research findings suggested that despite some long lasting negative repercussions following critical incidents, participants also reported positive personal and professional changes in their lives. Several participants described a degree of learning and post-traumatic growth initiated by the critical incident. Some found opportunities to adjust their views about themselves, their professional practice and

their workplace, while others reported that they became more alert and cautious at work. The notion of learning and post-traumatic growth in the wake of a medical error was studied by a group of researchers who interviewed physicians in America (Plews-Ogan, Owens, & May, 2013). Their analysis identified that physicians incorporated the new realities post-event and revised or expanded their view of themselves and how they practiced as an effect of it. The researchers claimed that the physicians approached their work in a way that enhanced patient safety as well as safeguarded their own fallibility by assimilating what they have learned from the incident. Congruent with the findings of my study Plews-Ogan and colleagues concluded by highlighting that physicians underwent a process of post-incident growth, instigated by the learning arising from the experience of a medical error (Plews-Ogan et al., 2013).

Some of the participants of my study felt they became 'better nurses' as a result of the lessons they learned in the wake of the incident. They suggested that the health care organisation could learn from their perspective of the incident and use this information to develop stronger policies and guidelines with the aim to make their workplace safer for patients and staff. Similarly, the participation in organisational learning by contributing to the prevention of future incidents has been described as an important "opportunity to heal" by Denham (2007, p. 116) after a series of interviews with senior experts in health care quality and safety. In summary, the literature supported the findings of the third theme of my study and suggested that the repercussions following the widespread impact and extensive aftermath of critical incidents were described as enduring and long lasting (Dekker, 2013; Elmir et al., 2017; Rinaldi et al., 2016). Although the experiences associated with the incident had the potential to imprint a permanent memory of the event, learning from it was linked to post-traumatic growth by the display of a more favourable professional self-image (Marmon & Heiss, 2015; Mayer & Hamilton, 2018; Plews-Ogan et al., 2013).

6.7 Workplace support

The findings of my study revealed within theme four that only a minority of participants felt well cared for by their workplace following the incident, which

consisted of immediate debriefing, counselling opportunities and follow-up communication with their managers. They appreciated the care provided by their managers and found it reassuring to receive acknowledgement to rebuild their professional confidence and function within their roles more effectively. However, they generally felt there was not enough of it. An example of how effective care has been achieved occurred at the Missouri University Health Care (MUHC) in America, through the implementation of a second-victim support program that provides "care at the point of impact" (Scott & McCoig, 2016, p. 6). Risk managers and patient safety team members at the MUHC collaborated to investigate possible actions that could alleviate the post-event suffering and address the needs of health care professionals involved in critical incidents. Their model was based on a predictable path to recovery, which was developed with the aim to guide supportive interventions (Scott et al., 2009). Although health care professionals had unique needs in the wake of critical incidents, Scott and colleagues designed a 6-stage trajectory that progressed from the immediate chaos and accident response, to intrusive reflections, restoring personal integrity, enduring the inquisition, obtaining emotional first aid and finally moving-on. Each stage presented distinctive challenges for second victims and posed unique opportunities for the provision of support from an organisational perspective (Scott et al., 2009). According to Scott and McCoig (2016), managers and targeted organisational support systems can positively influence outcomes of each of the stages by offering support and anticipatory guidance. Similarly, Denham (2007) proposed the five rights of second victims that ought to be considered by organisational leaders. Denham abbreviated the five rights as TRUST, which include treatment that is just, respect, understanding and compassion, supportive care and transparency as well as the opportunity to contribute to learning (Denham, 2007). Through the implementation of a systematic approach and organisational guidelines that facilitate TRUST, second victims receive the opportunity to heal by feeling supported and cared for (Denham, 2007).

Contrary to the notion of organisational support were the experiences described by the majority of participants of my study, who perceived a distinct lack of managerial and organisational support and reported their mental and physical

needs resulting from the incident were not sufficiently considered at work. My findings indicated that the participants felt their managers and colleagues neglected to recognise the impact the incident had and the emotional, physical and professional toll it took, despite workplace characteristics reported to have significant effects on nurses' perceptions of recovery (Lewis, Baernholdt, & Hamric, 2013). The findings of previous studies highlighted that the availability of workplace support varied significantly and its adequacy was largely determined by the individual perception of those involved (Lewis et al., 2013; Ullström et al., 2014). Out of 21 health care professionals, only five reported they received adequate assistance from their managers, although they all worked in the same hospital and contributed to a Swedish study of the effects of adverse events (Ullström et al., 2014). Whilst the remaining majority of participants (n = 16) were disappointed with the level of involvement by their employer and highlighted a lack of formal structures and routines for supporting staff (Ullström et al., 2014). An integrative literature review of nurses' experiences of medical errors examined the findings of previous studies and reported that although the overall work environment was mentioned as an important indicator of their experiences with medical errors, the role of their managers had a particularly powerful positive or negative influence (Lewis et al., 2013). The integrative review depicted that some managers were recognised to advocate for the nurses involved in the errors, even during their absence, while most were perceived to only intending to discuss the error (Lewis et al., 2013). Lewis and colleagues concluded that if nurses sensed the work environment and their managers as punitive toward the error, they experienced increased anxiety and diminishing professional confidence as a result (Lewis et al., 2013). Previous research indicated that the workplace support offered was unsatisfactory for up to 85% of the physicians, nurses and midwives who took part in the Italian exploration of the path to recovery for second victims by Rinaldi and colleagues (2016). They described a clear disparity between their desired versus the actual support received and suggested to have increased organisational support, a friendlier atmosphere at work and better access to counselling services (Rinaldi et al., 2016). Similar findings emerged from a recent Australian study of the effects of adverse events on acute care nurses, who deemed adequate workplace support as imperative to minimise the

impact associated with it. However, the authors concluded that an improvement to the organisational response to second victims could assist them to reclaim their professional self-confidence and return to clinical duties more effectively (Kable et al. (2018). The discussion of my findings above suggested that even though some workplace support was provided, the second victim determined its effectiveness and adequacy and should therefore be considered as the key driver in determining the level and length of assistance made available.

Some of the participants of my study described the formal support in form of non-judgemental debriefing as not genuine, whilst others were not provided with a debriefing opportunity at all. Despite the benefits of debriefing, my study highlighted that half of the participants perceived their debriefing sessions, if they had them, as hypocritical. The participants experienced barriers to satisfactory debriefing and workplace support, including lack of time and shift work, which contributed to their perception of being neglected by the organisation and its managers. Due to time constrains during the shift, one of the participants of my study reported she was asked to attend a debrief session that was scheduled for the middle of the day, which she deemed was inconsiderate since the incident occurred during night duty.

The findings of my study revealed that debriefing, where second victims received supportive feedback from others who were involved in the critical incident and received validation that they were not alone, was paramount to obtain personal and professional reassurance. However, the literature indicated, that effective debriefing was often the exception rather than the norm (Mayer & Hamilton, 2018). A recent case study by researchers Schmidt and Haglund (2017) described the role of debriefing in ED as an intervention to improve compassion fatigue and promote resiliency amongst ED nurses. Debriefing was used as a relatively low-cost and nonthreatening way to discuss unanticipated outcomes after critical incidents, identify opportunities for improvement and heal as a team (Schmidt & Haglund, 2017). Through debriefing, nurses became better at talking about their feelings because they learned to understand themselves better and had the support of colleagues (Schmidt & Haglund, 2017). Similarly, interviews with Swedish ambulance

nurses revealed that formal debriefing sessions facilitated by their managers in conjunction with a psychologist were rare (Bohström et al., 2017). More often, debriefing was delayed for weeks after the critical incident, which was considered too late because they felt the need to defuse the stressful tension immediately (Bohström et al., 2017). One of the main barriers of adequate workplace support described in the literature was finding an appropriate time for second victims to attend debriefing sessions or follow-up conversations with their managers (Mayer & Hamilton, 2018). A group of nurses and physicians who participated in Mayer and Hamilton's study described the busy health care environment and a workplace culture where there is not even sufficient time to take a break, as a barrier to receiving adequate support at work (Mayer & Hamilton, 2018). Although managers and colleagues knew of the needs of second victims, inconsistencies in demonstrating compassionate workplace support existed widely (Mayer & Hamilton, 2018).

The participants of my study reported that whilst most workplaces adopted a 'no blame' philosophy and claimed to operate under a culture where the incidents were investigated without assigning blame or judgement to any particular member of the health care team, reality was perceived differently. Participants expressed anxiety associated with being blamed, judged and accused about the incident. A barrier to adequate workplace support could be attributed to the nature of an ongoing blame game (Cooper et al., 2017). Cooper and colleagues (2017) analysed a random sample of patient safety incident reports in the UK and revealed that the reports assigned blame to an individual in 45% of instances. The authors explained that the high frequency of blame in these reports may still be reflective of a health care culture that upholds the historical and hierarchical tendency of blame and retribution, rather than focusing on identifying strategies to increase patient safety and improve quality of care (Cooper et al., 2017). In a systematic literature review of the psychological responses of health care professionals in the aftermath of critical incidents, health care organisations were described to recurrently take a disciplinary approach that endorsed blame, which contradicted a culture of safety and a non-punitive environment essential to rebuild the self-confidence of second victims (Chan, Khong, & Wang, 2017). The notion of being blamed revealed by the

participants of my study was not a novel finding. It does however send an important message to organisations and managers to ensure the 'no blame' philosophy is a functioning model of a culture that deals with incidents in a blame-free way to break down the barriers to effective support. This includes the promotion of a blame free culture and the adoption of non-judgemental behaviours when leading formal debriefing and follow-up sessions with second victims, to ensure that providing support for their needs is the primary concern.

The findings of my study illuminated that it was vital to receive support from colleagues to receive reassurance and mitigate negative feelings associated with the experiences of the incident. However, instead of ongoing collegial support, some participants experienced strained professional relationships following the incident, which contributed to feelings of a bullying work environment and hindered their recovery. Two participants revealed that they were even subjected to annoyance, anger and defensiveness from their colleagues, who failed to display professional respect after the incident

The theme of encountering unprofessional relationships resonated in my study, where some participants shared they felt talked about in private by their peers, and were required to navigate the harsh and devastating reality of workplace bullying at a time when they craved peer support the most. Other studies confirmed that second victims feared being gossiped about, were thought of inferiorly and lost trust from their colleagues (Lewis et al., 2013; Rinaldi et al., 2016). Horizontal and vertical bullying continues to be a significant problem in health care; straining communications, tainting the workplace culture and jeopardising patient safety (Sauer & McCoy, 2018). The extent of bullying cannot be accurately quantified but has been estimated to be 40% of nurses, which increases their likelihood to leave their employer (Sauer & McCoy, 2018).

The effects of bullying in nursing, may further compound the already fragile professional self-image reported by the participants of my study, because they yearned for the support and understanding of their colleagues. To further highlight the negative influence of a bullying work environment, lessons can be learned from

an American study of physicians and medial residents, which identified peer support programs as paramount in the recovery of second victims (Trent et al., 2016). Their findings revealed that peer-to-peer support was the most effective means to alleviate the negative feelings related to the critical incident (Trent et al., 2016). The current literature aligned with the findings of my study by suggesting that a work environment which consisted of fractured professional relationships and bullying was counterproductive to the recovery of second victims (Lewis et al., 2013; Rinaldi et al., 2016; Sauer & McCoy, 2018). An American survey investigated bullying amongst nurses and highlighted that and astounding 40% felt bullied. Organisations and their managers should take note of these significant findings because this discussion indicates that unprofessional relationships and bullying complicate the recovery, inhibit post-incident growth and perpetuate the culture associated with assigning blame related to the incident.

Although some participants of my study were followed up by their managers, they felt that their employers were just 'ticking a box' and found the support offered insincere and even dishonest. Half of the participants considered it would have been beneficial to their recovery if they were invited to contribute their experience to stipulate improvements to current procedures and policies, in order to prevent similar events from happening in the future or to increase both patient and staff safety. However, none of the participants were given this opportunity. It has been mooted that incidents should be seen as a "catalyst for change", that lead to amendments of practice and organisational processes to reduce the risk of similar future incidents occurring (Tallo, 2015, p. 33). Tallo's (2015) opinion corresponded with the findings of my study, as he claimed that health care professionals involved in incidents should receive the opportunity to examine what they did, and why, so that investments could be made into quality improvement processes (Tallo, 2015). Given the opportunity to experience insight and contribute to patient safety initiatives enabled second victims to create something good from their experience, which facilitated their ability to move-on (Scott et al., 2009).

The theme of preconceived acceptance that exposure to adversity formed part of any health care professional's job description was strongly evident in the

findings of my study. Most of the participants felt that it was a universal expectation that they coped with incidents at work. They divulged that they were expected to remain calm and function under pressure despite exposure to adversity, regardless how it affected them afterwards. One participant was directly advised by her manager to 'get on with it'. It was not only the perspective of their employers and colleagues, but also their family and friends as well as their own. A similar sense of this stoic professional identity was illustrated by a group of paramedics, who took part in a qualitative study of experiences and coping strategies when encountering critical incidents in Israel (Avraham et al., 2014). The paramedics described that society as a whole expected them to be capable of functioning efficiently in tension-charged and high-pressure situations without being emotionally shaken by the critical incident unfolding at the scene (Avraham et al., 2014). Although respecting that the acuity of critical incidents that paramedics are exposed to may differ from the disciplines of nursing and midwifery, parallels could be drawn as the paramedics revealed how their self-perception of their defensive toughness was cracked when they realised their vulnerability and sensitivity in certain critical incidents (Avraham et al., 2014). Another more recent survey by Rodriquez and Scott (2018) explored the extent of this 'defensive toughness' and the associated emotional labour invested by physicians, nurses and other allied health care professionals. Their workplace practices either explicitly stated or implicitly suggested that feelings of guilt, shame, stigma and loss of confidence should be suppressed to meet the organisational expectation (Rodriquez & Scott, 2018). Emotional labour or the emotional work was a social-psychological concept developed by Hochschild (2003), explained how employees tried to align their emotions with organisational expectations or demands on how they should or should not emote at work (Hochschild, 1979, 2003). Rodriquez and Scott's study conveyed that 38% of their participants were unambiguously told to keep quiet about the critical incident, to toughen up, be strong or to "get over it", which contributed to their experience of emotional work (Rodriquez & Scott, 2018, p. 142). Although some were not overtly instructed to refrain from discussing the impact of the incident, it was more the unspoken culture that discouraged full disclosure of the event and implied that health care professionals who suffered emotionally were weak (Rodriquez & Scott, 2018). Congruent with the findings of my

study, the results of Rodriquez and Scott's survey revealed that workplaces which did not promote the discussion of the full impact of incidents, placed an anticipation on staff to suppress their feelings and align their emotional display with organisational expectations in the manner consistent with the notion of the emotional labour described by Hochschild (Hochschild, 1979, 2003).

In summary, the discussion of theme four brought significant issues to the fore related to current perceptions of the inadequacy of workplace support after critical incidents, despite the efforts made by organisations and their managers (Lewis et al., 2013; Rinaldi et al., 2016; Ullström et al., 2014). The discussion of my findings drew attention to certain barriers of the provision of workplace support, such as bullying, assigning blame and the expectation to cope, which require organisational attention (Cooper et al., 2017; Sauer & McCoy, 2018). However, by actively promoting the well-being of second victims, managers and colleagues can contribute to build their professional resilience, help them move-on from their experiences and thus protect the future of their profession (Schmidt & Haglund, 2017; Scott & McCoig, 2016). Therefore, future research is required to establish, improve and evaluate appropriately designed support and intervention systems, as well as a positive workplace culture to facilitate and normalise the complex emotional and professional recovery of second victims.

6.8 Moving-on

The final theme of my study indicated that moving-on from the experiences related to a critical incident did not imply to forget about what happened. All of the participants associated the concept of moving-on with accepting what happened, whilst continuing to live their personal and professional lives and achieving a balance between the two. Most of the participants mentioned a toolkit of coping strategies and defensive practices that helped them to navigate and overcome the impact of the incident, although some of the participants believed to be caught up in the aftermath, as they continued to long for inner peace and redemption at the time of the interview. Previous research proposed that the development of defensive practices and the maintenance of performance despite the continued torment

stemming from the event, contributed to the ability to survive within the health care professions (McCool et al., 2009; Scott et al., 2009). To survive at the workplace and move-on, the participants of two studies that investigated the link between workplace stress, personality traits and burnout in English ICU nurses and American acute care nurses identified methods utilised by the participants, of preventing or regulating the development of burnout by learning to cope (Burgess, Irvine, & Wallymahmed, 2010; Lewis et al., 2015). The more effective the coping strategies, the greater they contributed to a balanced and healthy lifestyle at home and at work, and the development of more advanced psychological, emotional and physical resilience following traumatic experiences in American ICU nurses (Mealer et al., 2012a), allowing them to recover and thrive. Positive re-interpretation of the event, venting emotions and seeking social support from friends and family were reported in a survey of American medical emergency technicians and paramedics as positive coping strategies, while others lived in denial or turned to drugs or alcohol to survive in the workplace (Mishra et al., 2010).

Similar findings emerged from my study as several participants viewed themselves as capable to manage and thrive under difficult circumstances and described traits related to feeling equipped to cope. Those participants tended to navigate the aftermath more easily and were more likely to maintain their professional clinical roles. Four of the participants mentioned that the main reason they felt equipped to cope was that they were generally happy with their personal and professional lives, ate healthily, exercised and preserved a social network, which fostered their work-life balance and situated them favourably to withstand the impact of incidents. Some alluded to their resilient and stoic personality that gave them a more positive outlook in life and made them feel more adept to overcome the emotional and physical reactions evoked by the incident. Comparably, the ability to move beyond the strong emotions caused by adverse perinatal outcomes allowed practitioners of an international study that explored experiences of midwifery practice to continue to provide high quality care and made them feel in a better position to heal personally (McCool et al., 2009). Active coping methods and characteristics of resilience were successful for American ICU nurses in preventing a

psychological overload following a trauma at work and enabled more positive adjustments (Mealer et al., 2012a). In addition, Mealer et al. (2012a) argued that the traits of resilient ICU nurses as well as adaptive coping skills can be learned and could therefore serve as either a preventative measure or post-event strategy to assist health care professionals to thrive again in a tension-charged and highly stressful environment. Related findings were identified by American paramedics (n = 125), who completed a survey which investigated the effectiveness of adaptive versus maladaptive coping strategies following trauma (Kirby et al., 2011). Adaptive approaches included self-help, expressing emotions, seeking support and understanding, as well as accepting that a problem might be relieved through an optimistic outlook and more affirmative reframing of the situation (Kirby et al., 2011). Kirby and colleagues concluded that organisations and other health care professionals may benefit from promoting and incorporating adaptive coping strategies within intervention and preventative programs to potentially mitigate the development and extent of negative outcomes (Kirby et al., 2011) and thus foster a well-adjusted work-life balance to counteract the impact described by the participants of my study.

Although there was evidence in the literature that described a link between the application of adaptive coping skills in order to withstand the stressful work environment found mainly professional groups employed in ICU, ED or paramedicine (Burgess et al., 2010; Kirby et al., 2011; Lewis et al., 2015; Mealer et al., 2012b), there was a distinct gap in the knowledge surrounding this topic that recognised the experiences of nurses and midwives who worked in general clinical areas. The findings of my study addressed this gap and proposed that the traits of feeling 'equipped to cope' were highly individual and where present at varying levels in nurses and midwives from diverse clinical settings. A significant finding emerged that suggested some self-assigned traits contributed to a general optimism, which may well have been a determining factor in how well the participants moved-on from the impact of the incident.

Not all of the participants in my study shared traits such as a positive mindset. Some felt unprepared for the type of incidents they were involved in or

experienced problematic and troublesome personal problems, which compromised their usual effective defence mechanisms and prevented them from moving-on. It is worth noting that the level of stress experienced by the participants was subjective, which meant that a situation that was experienced as stressful might not be perceived that way by another person (Hein, Arno, Miranda, & Bianca, 2011). Hein and colleagues also claimed that humans react with distinct coping strategies to diverse types of stressors after conducting a study that explored how serious events and coping strategies were associated with traumatic stress in nursing (Hein et al., 2011).

Similar responses were observed in ambulance personnel, where the stress stemming from exposure to traumatic events also precipitated a spectrum of negative psychological outcomes, such as post-traumatic stress disorder (PTSD), depression, anxiety or substance abuse (Mishra et al., 2010). Mishra and colleagues conducted a survey of medical emergency service technicians and paramedics in Hawaii, to examine the prevalence of post-traumatic stress and PTSD. Although their survey indicated that only 5% of the respondents met the clinical diagnostic criteria of PTSD, an astounding 83% of the emergency personnel experienced indicators of PTSD, such as intense fear, repeated disturbing memories, stressful triggers, intruding dreams, flashbacks or reliving of the event (Mishra et al., 2010). These indicators were all comparable to the symptoms disclosed by some of the participants of my study as discussed earlier in this chapter. Mishra et al.'s survey results (2010) may help to explain why some of the participants of my study felt that they moved-on initially, however, in reality, they continued to experience indicators of post-traumatic stress similar to the ones described by the medical emergency personnel. Mishra and colleagues concluded that preventative measures and early identifications and treatment may alleviate months of suffering from distress of traumatic events and urged emergency services to develop and promote effective and active coping strategies (Mishra et al., 2010).

While some participants of my study were more adept to cope, they were all actively seeking ways to help themselves and described active coping strategies that helped them transfer the attention to different areas of their lives, including

finding new priorities, writing poetry, painting, reading self-development books or relying on their strong faith for reassurance. Other tension relieving strategies included deep breathing techniques, mindfulness, meditation and spending time in nature with their friends and pets. Previous research by Mayer and Hamilton (2018) was echoed in my findings as they indicated that many second victims developed their own self-help strategies, rituals and routines to prepare themselves to start or end their shifts. An American nurse who participated in Mayer and Hamilton's (2018) study, was using the drive home as a personal debrief space and when she turned the car off, she cognitively made an effort to transition from the role as nurse into her role as mother (Mayer & Hamilton, 2018). To manage the reflective process, another participant of their study developed a method to think of three things she could have done better and three things that went really well at the end of her day and after that it was her personal time and she left the hospital physically and mentally behind (Mayer & Hamilton, 2018). Mayer and Hamilton (2018) revealed that the other physicians, nurses and chaplains included in their study used exercise, yoga or music after a stressful shift or to prepare themselves before their next workday (Mayer & Hamilton, 2018).

Crystallising the main theme from my findings, I concluded that achieving a balance in life was an important influencing factor of the capacity to move-on from the impact of the critical incident. Apart from the coping strategies discussed earlier, the participants described that learning to take care of themselves by taking leave, controlling unhealthy habits and building a supportive network of family and friends as pivotal to overcome the personal and professional insults associated with critical incidents. Whilst the findings of my study and previous research (Mayer & Hamilton, 2018; Mishra et al., 2010) suggested that these self-help strategies were beneficial to alleviate work related tension, when the initial traumatic stress became chronic, the psychological syndrome of burnout may be encountered, which was related to ongoing interpersonal stressors in the work environment (Hein et al., 2011). The relationship of adverse events and nurse burnout has been studied by a group of researchers in America to examine whether nurse second victims experienced burnout (Lewis et al., 2015). Lewis et al. (2015) identified a link between elements of

emotional exhaustion and decreased emotional resources, as well as depersonalisation, such as callousness or cynicism toward patients, and reduced personal accomplishment with a negative view of their professional self to be associated with the involvement in adverse events (Lewis et al., 2015). To alleviate harm to nurse second victims and prevent the development of burnout, Lewis et al. (2015) suggested several interventions, such as support from managers, peers and physicians. They also recommended health care organisations to monitor and educate second victims regarding signs and symptoms of burnout, as well as the promotion of coping strategies to improve a work-life balance and strengthen emotional resources (Lewis et al., 2015).

Taking regular leave was mentioned as one of the main strategies to create a welcome physical and mental distance between the workplace stress and retain a personal space that helped the participants of my study to attend to something else, other than work, and to re-direct their recurring thoughts related to the incident. I did not identify previous research arising from the disciplines of nursing or midwifery that explored the relationship between leave and implications of returning to work after involvement in critical incidents. However, the significance of leave was studied by Halpern and colleagues, with the goal to examine the link between downtime after critical incidents and long-term emotional sequelae in American paramedics (Halpern, Maunder, Schwartz, & Gurevich, 2014). The results of the study indicated that receiving any form of downtime helped paramedics to calm down and relieve tension and was associated with significantly lower instances of depressive symptoms (Halpern et al., 2014). Since depression was reported to be a widespread long-term outcome of critical incidents in paramedics, Halpern and colleagues recommended a period of downtime as a worthwhile intervention for organisations to adopt (Halpern et al., 2014). These benefits of receiving downtime observed in ambulance personnel authenticated the experiences of the participants of my study. To alleviate general workplace stress and prevent further exposure to incidents, some participants applied for regular annual leave or long service leave to allow some ‘breathing space’ to contribute to the balance between their professional and personal lives.

The majority of the participants of my study reported that some form of physical exercise not only helped them to release workplace related tension discussed earlier in this chapter, it also promoted a better work-life balance. Although lacking energy and motivation were barriers to engage in regular exercise regimes, the participants of my study reported experiencing benefits during and after exercise and participated in activities of varying intensity such as yoga, walking with friends or pets, joining a gym, structured exercise classes, bike riding, chopping wood or gardening. On the other hand, only two of the participants of this study admitted to the development of unhealthy habits to cope with the stress related to the critical incident, which compromised their health and well-being further. Whist one participant noticed an increase in alcohol intake to mellow, settle and cope at the end of the day, another one overindulged in certain foods. The benefits of achieving a work-life balance to counteract fatigue related to shift work has been explored in an Australian survey of paramedics (Paterson, Sofianopoulos, & Williams, 2014). Lessons can be learned from this professional group as the respondents highlighted the importance of health and well-being related to their work-life balance. They linked reduced ability to exercise due to shift work and fatigue to mood changes and health concerns, such as weight gain and exhaustion (Paterson et al., 2014). The use of poor dietary choices, alcohol and drugs to deal with work related stress has been reported by other professional groups, such as physicians and surgeons (McLennan et al., 2015; Robertson & Long, 2018), as well as medical emergency personnel, where up to 10% of study participants admitted to self-medicating with food, alcohol or drugs (Mishra et al., 2010; Paterson et al., 2014). Most participants of my study reported that controlling unhealthy habits, such as alcohol consumption and overindulgence in food, as well as some form of physical exercise like yoga, walking with friends or pets, joining a gym, bike riding, chopping wood or gardening, helped them to release workplace related tension. My findings indicated that gaining control of unhealthy habits and potentially harmful life-style behaviours was an empowering way to make positive contributions to achieving a healthy and balanced life.

Although the participants described the various coping strategies that aided in their recovery, only half of the participants of my study conveyed they were able

to ‘get back on the horse’ and return to work, the other half struggled to process their grief and sadness and required more time to heal and function again in their professional capacity. Whilst some of the participants of my study maintained their clinical roles despite the intense reaction and long lasting memory that permeated their professional self-perception, four of them contemplated leaving the clinical setting where the incident occurred. Two of the participants found it necessary to make modifications to the clinical setting to circumvent triggering recollections, while the others reported to love their roles in their current work environment and decided to stay despite adversity and lacking organisational support. This outcome has been studied by Rodriquez and Scott (2018) with a survey of physicians, nurses and allied health professionals, which explored the response pattern of second victims related to their professional roles. The results of their survey suggested that inadequate social and interpersonal support at work and lacking opportunities to discuss what had occurred influenced the health care professionals’ likelihood of dropping out of their professional roles post-event. Nearly 65% of the respondents indicated that they did not receive support from anyone within their health care organisation (Rodriquez & Scott, 2018). Rodriquez and Scott concluded that the dropping-out pathway was pursued by health care professionals because they aligned their emotional displays with the organisational expectations to get on with their jobs, resulting in supressed feelings of shame and guilt, which potentially contributed to burnout, changed clinical roles or premature retirement (Rodriquez & Scott, 2018)

This was highlighted by the findings of my study, where one participant recalled the immense sense of relief after she left the hospital where the incident occurred and described starting over elsewhere as pivotal for saving her nursing career. Another participant felt forced to make major adjustments to her future and applied for leave. After initiating extended leave through an unpleasant compensation claim, she never returned to work after making the life-changing and devastating decision to depart from the profession of nursing and thus, her job security, her friends and colleagues and her identity as a nurse.

In summary, the discussion of the final theme revealed that moving-on from critical incidents was dependent on multiple factors, the extent of the impact, the

severity of repercussions and the perceived adequacy of the workplace support provided (Halpern et al., 2014; Mayer & Hamilton, 2018; Rodriquez & Scott, 2018). Potentially there could be many more nurses, midwives and other health care professionals caught up in the aftermath of critical incidents who sought ways to help themselves to move-on and regain the professional confidence required to remain in the workforce, and yet go unrecognised. This discussion suggested that self-assigned traits of feeling adept at coping with critical incidents at work combined with a positive outlook on life strongly influenced how well the participants moved-on from the profound impact they experienced (Burgess et al., 2010; Lewis et al., 2015; Mealer et al., 2012b). Those who found ways to help themselves with effective coping strategies and controlled unhealthy habits tended to be in a favourable position to overcome, counteract or prevent symptoms of post-traumatic stress and burnout to achieve a more balanced work-life (Hein et al., 2011; Kirby et al., 2011; Mishra et al., 2010).

6.9 Chapter summary

Health care professionals are faced with many challenges in the workplace and the involvement in critical incidents has the potential to initiate a significantly unpleasant emotional, physical and professional response. The extent and seriousness of the events carry the risk to compound the experiences of stress and give rise to triggering situations and a series of long lasting repercussions. The enduring nature of the impact, the lingering feelings associated with the critical incident and the recurring reflective thoughts seemed to initiate the deliberation of the health care professionals' place in health care and drove some to alter their career paths. Organisational support, managerial involvement and a positive workplace culture based on sound professional relationships was identified to harness effective strategies that equipped second victims with the skills to cope after critical incidents and promoted a healthy work-life balance. Findings from my study offered new insights into the importance of a generally positive outlook and the power of optimism to withstand and overcome the personally damaging and professionally destructive challenges associated with critical incidents at work. While

the emotional pain and feelings of professional inadequacy associated with the incident may not be unavoidable, they are typically underestimated and for that reason, encouraging and sincere organisational and peer support must be readily available to alleviate the harmful consequences. For second victims to return to professional functioning and thrive in their clinical roles, their perceived needs must be met and their feelings of self-blame, guilt and failure must be de-intensified and mitigated. The future of nursing and midwifery requires increased awareness of the impact and widespread implications of critical incidents and their associated and far-reaching after-effects. Second victims need an organisational culture that cares to meet their needs and promotes their well-being so that they can continue to deliver the compassionate care necessitated by their profession. Chapter seven will present the major findings from this study and address the significance, strengths, and limitations, before concluding with recommendations for practice, education and future research.

Chapter 7. Recommendations and conclusion

7.1 Chapter overview

The final conclusion of this thesis presents a concise summary of the key elements and contextualises my study by clearly indicating the significance of my research, which emerged from the discussion of my findings. Chapter seven identifies how the recommendations align with my findings and demonstrates that the objectives of my study were. Although the complex emotional, physical and professional impact that accompanied the involvement in critical incidents was illustrated in the literature discussed in the previous chapter six, there was a dearth of contemporary research that focused specifically on the concept of moving-on from the extent and the complexities associated with such events, as experienced by nurses and midwives who worked in non-critical care settings. This interpretive descriptive study was explicitly designed to contribute to this gap in existing knowledge and to provide answers to my research question. I will sum up my main findings, before addressing the limitations of my study. I then conclude my thesis with recommendations for future directions in research, clinical practice and organisational strategies.

7.2 Summary of the results

In this section, a summary of the findings were directly related to the aims and objective of this study, which were presented in chapter five. The participants in this study were all young and middle-aged women who experienced a wide range of incident types within various non-critical care settings. Despite the diversity within the participant group, their candid sharing of experiences illuminated the similarities of their reactions and responses, as well as processes and approaches displayed within the health care organisations where they were employed. Regardless of the nature and location of the incidents or the time lapsed, all participants were notably affected by them and consequently, some lives were changed forever. This rich data, which emerged from the participants' unique stories, revealed several shared short

and long-term effects and shaped the major themes and sub-themes of my findings. The interpretations have been captured in five main themes *(1) initial emotional and physical response, (2) the aftermath, (3) long-lasting repercussions, (4) workplace support and (5) moving-on*.

The participants often found themselves caught in a myriad tumultuous negative thoughts of self-doubt and guilt after the initial emotional and physical response. Many felt trapped in a veil of secrecy in the aftermath of the event and yearned to share the burden. Some participants dreaded the long-lasting repercussions associated with the incident and feared the consequences of receiving blame for what happened. Several adaptive strategies were identified, such as achieving a balance in life by taking care of their own physical and mental well-being. Reflective thoughts and triggering situations, as well as various unsupportive workplace behaviours were recognised, which complicated and compromised their recovery. Moving-on was described as a lengthy and wearisome journey. However, some participants were able to flourish within their profession and clinical role, while others began to struggle and felt compelled to look for alternative solutions. Meeting the objectives of my study to explore the impact of critical incidents on the personal and professional lives of nurses and midwives in non-critical care settings, and identify adaptive strategies employed by them to move-on, the following recommendations were formed.

7.3 Recommendations

7.3.1 Recommendations for future research

- A further exploration of the effectiveness of support services and adequacy of workplace practices to meet the needs of nurses and midwives following involvement in critical incidents to sustain the retention of nurses and midwives in the workforce is conducted.
- Research into the impact of incorporating interventions which cultivate resilience and effective coping skills within undergraduate and postgraduate nursing and midwifery education programs.

- Further integration of videoconferencing technology into their data collection methods when interviewing participants from distant locations, to break down geographical barriers and expand recruitment.

7.3.2 Recommendations for clinical practice and strategies for organisations to adopt

- The provision of a multipronged approach by health care organisations to offer genuine and formal support structures and processes for nurses and midwives to mitigate the destructive emotions linked to the negative influence on quality of care.
- The promotion of a culture change that role models an empathetic and positive workplace practice to avoid attrition and keep nurses and midwives in the workforce.
- The strengthening and normalisation of organisational support systems to lift the 'veil of secrecy' and ensure access to services to meet the complex needs of nurses and midwives after their involvement in critical incidents.
- The provision of safe and sincere opportunities to talk about the incidents to minimise feelings of self-blame, guilt and professional incompetence.
- The strengthening of the existing 'no blame' culture into a transparent working model that is universally adapted and openly portrayed by all levels of the health care hierarchy to abate the entrenched association of incidents with blame and culpability.
- Employ strategies which enable individuals to achieve personal and professional post-incident growth and encourage adaptive coping strategies to achieve a work-life balance and optimistic outlook.
- Encourage those who have been involved in clinical incidents to contribute to risk management strategies within the organisations to improve the safety of procedures and processes.
- To normalise accessing opportunities where sharing the burden is welcomed and a collegial and supportive workplace environment is valued for all nurses and midwives and potentially other health care professionals.

7.3.3 Recommendations for education

- Implement strategies within undergraduate and postgraduate curricula to cultivate resilience amongst novice and experienced nurses and midwives to

promote the development of coping skills to withstand the potential impact of critical incidents in the clinical settings.

- Apply a case study approach to sharing the knowledge and experiences so that nurses and midwives can learn from them; to share the implications associated with involvement in critical incidents, to raise awareness of their physical and emotional reactions and need for support in order to develop effective approaches to navigate the aftermath and move-on.

7.4 Strengths of the study

The findings of my study provided significant insight into the experiences and perceptions of nurses and midwives as second victims of critical incidents in non-critical care clinical settings. My findings have contributed to the gap in the international literature surrounding this topic from an Australian perspective. Globally, nurses and midwives are essential in the delivery of quality care and it is therefore vital for health care organisations and the managers within them to understand how critical incidents impact on nurses and midwives in non-critical care areas and how best to provide support in order to retain them in the workforce. The experiences, perceptions and identification of effective coping strategies employed by the participants to overcome the persistent impact of the event, have the potential to inform and strengthen the development existing support systems that focus on assisting second victims to move-on following critical incidents. The gained understanding from the participants of my study also offered a valuable source of information, hope and guidance for fellow nurses and midwives, as well as potentially other health care professionals, who have been involved in critical incidents, and provide a basis for future research. As a result, the findings from my study will inform health care organisations and nursing and midwifery education programs to better prepare nurses and midwives for the potential impact of critical incidents, as well as promote strategies to move-on from the incident to continue to function and thrive in the clinical setting. To reach a wide audience, I intend to publish and disseminate the findings of my study and their implications for practice, for the purpose of contributing to the understanding of the experiences of nurses and midwives at an

organisational level. By publishing my findings, I will raise awareness of the importance of providing adequate managerial assistance after the incident as well as a supportive workplace culture to meet the perceived needs of second victims, and thus prevent PTSD, burnout and attrition.

7.5 Limitations of the study

Limitations of this study need to be considered, however, they did not undermine or weaken the richness of the data interpreted and the potential impact of the findings. Participants self-identified to participate in my study, which potentially contributed to self-selection bias, because those who still felt troubled by their exposure to the incident were possibly unable to reveal their experiences to me to avoid re-traumatisation, and those who shared their stories may have had an invested interested to voice their opinion about this topic. Although the participants retained a distinct and vivid memory of the events, recall bias may have impeded the degree of detail remembered.

Whilst the strengths unquestionably outweighed the limitations, I acknowledge that the co-construction of knowledge, which occurred through the interaction of individuals, could be viewed as a limitation, as it integrated my own values, historical experiences and beliefs, despite addressing my potential biases through reflective practice. By means of frequent reflection, I was thoughtful throughout the entire research process, of my own 'experiential baggage' and how it potentially shaped my approach to collecting and analysing the data. Although I implemented measures to avoid personal preconceptions, the research findings are ultimately my analysis of the participants' stories influenced by my interpretation of their accounts, which may be considered bias.

Applying the methodology of interpretive description as a guiding framework posed some practical challenges. As a relatively new and not widely utilised methodology within my department and supervisory team, and combined with my inexperience as a researcher, I was at times uncertain about methodological design decisions and heavily relied on the texts and resources by Professor Sally

Thorne. In particular, I was apprehensive about the analytic logic required to create a solid interpretive description with robust findings, which can ultimately be applied back into practice. While I endeavoured to uphold the methodological framework of interpretive description, I must acknowledge the potential risk that I have unknowingly and unintentionally misinterpreted certain features, which eventually lead to insufficient interpretations of the data and findings that may be limited in their usefulness. To ensure my interpretations and findings were adequately developed, I repeatedly referred to Professor Thorne's texts and publications and regularly addressed my concerns with my research supervisors.

Fundamentally, the results of an interpretive descriptive study are always associated with the context, the situation and the time in which they were created. The findings of my study were merely representative of my interpretation of the experiences conveyed by the participating nurses and midwives at the time of their interviews and may not be transferable to the population.

7.6 Chapter summary

The findings of my study illuminated that moving-on after critical incidents is a complex and wearisome journey. The nurses and midwives who participated in my study provided insights into their unique perceptions and experiences without reservation for no other reason than to contribute to this research and to inform those who came after them. It was evident that a lack of organisational support exacerbated their emotional, physical and professional reactions. With limited or no organisational guidance, participants were reluctant to ask for help in a culture where the expectation to 'get on with it' was the norm. At its worst, the sequelae of involvement in critical incidents contributed to PTSD, burnout and attrition.

As a nurse, this saddened me and the desire to explore the current experiences and illuminate the perceptions of nurses and midwives was impetus for the drive of my study. This study highlighted the individual stories, as well as their collective experiences, so that nurses and midwives who were involved in critical incidents in non-critical clinical areas received a voice that could be heard, shared and

understood. Maintaining a work-life balance while faced with adversity and stress at the workplace, required strength, resilience and support from health care organisations, their managers and from colleagues. I made several recommendations to address the research question and objectives of this study and to strengthen and evolve current support systems so that second victims can be better prepared, supported and closely monitored for signs of post-traumatic stress in order to intervene before chronicity is established and nurses and midwives leave. These recommendations are for consideration by health care organisations, nursing and midwifery education programs, researchers, individual nurses and midwives, as well as potentially other health care professionals. Nurses and midwives are essential in the delivery of quality care and rely on an organisational culture that cares to meet their needs and promotes their well-being so that they can continue to deliver compassionate care, remain in the workforce and contribute to the future of nursing and midwifery practice. By undertaking this research, I have gained a deeper understanding of the value and meaning of a positive outlook in life and the significance of a work-life balance to improve many areas of personal and professional health and well-being. The nurses and midwives in my study have inspired me to disseminate the findings from this study and share their insights through publication, to reach a wider audience and inform health care organisations, education programs and individual nurses and midwives to better prepare and support second victims on their journey to recovery. As I conclude this research project, I thank the participants of my study for their contribution and wish them and all other health care professionals who find themselves involved in a critical incident the capacity to move-on and succeed in their future professional endeavours.

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APPENDICES

Appendix A Logic grids with keywords and index terms

Logic Grid with Keywords and Index Terms Qualified with Field Codes and Wildcard Characters (CINAHL)

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse (nurs*)	experience (experienc*)	critical incident	qualitative
midwife (midwi*)	stress	incident (incident*)	
MH Practical nurses	trauma (trauma*)	error (error*)	
MH Clinical nurse specialists	anxiety	event (event*)	
MH Staff nurses	resilience (resilien*)	"clinical incident*"	
MH Registered nurses	coping (cop*)	"adverse event*"	
MH Diploma Nurses	mov* on	"medical error*"	
MH Nurses	recovery (recov*)	"medication error*"	
MH Nurse Midwives	response (respon*)	"near miss"	
MH Midwives	post-traumatic growth	"severity assessment code"	
	distress (distress*)	*(MH "Sentinel Event")*	
	perception (perception*)	*(MH "Adverse Drug Event")*	
	psychological	*(MH "Health Care Errors")*	
	psychosocial	*(MH "Medication Errors")*	
	(MH "Work Experiences")	*(MH "Treatment Errors"*	
	(MH "Reflection")	*(MH "Adverse Health Care Event")*	
	(MH "Stress")		
	(MH "Stress, Occupational")		
	(MH "Critical Incident Stress")		
	(MH "Stress, Physiological")		
	(MH "Stress, Psychological")		
	(MH "Trauma")		
	(MH "Anxiety")		
	(MH "Hardiness")		
	(MH "Coping")		
	(MH "Defense Mechanisms")		
	(MH "Recovery")		
	(MH "Stress Disorders, Post-Traumatic")		
	(MH "Suffering")		
	(MH "Perception")		
	(MH "Psychological Well-Being")		
	(MH "Adaptation, Psychological")		

Note: No specific field codes were selected when searching

Logic Grid with Keywords and Index Terms or Subject Headings (CINAHL)

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse	experience	critical incident	qualitative
midwife	stress	incident	
MH Practical nurses	trauma	error	
MH Clinical nurse specialists	anxiety	event	
MH Staff nurses	resilience	clinical incident	
MH Registered nurses	coping	adverse event	
MH Diploma Nurses	moving on	medical error	
MH Nurses	recovery	medication error	
MH Nurse Midwives	response	near miss	
MH Midwives	post-traumatic growth	severity assessment code	
	distress	*(MH "Sentinel Event")*	
	perception	*(MH "Adverse Drug Event")*	
	psychological	*(MH "Health Care Errors")*	
	psychosocial	*(MH "Medication Errors")*	
	(MH "Work Experiences")	*(MH "Treatment Errors"*	
	(MH "Reflection")	*(MH "Adverse Health Care Event")*	
	(MH "Stress")		
	(MH "Stress, Occupational")		
	(MH "Critical Incident Stress")		
	(MH "Stress, Physiological")		
	(MH "Stress, Psychological")		
	(MH "Trauma")		
	(MH "Anxiety")		
	(MH "Hardiness")		
	(MH "Coping")		
	(MH "Defense Mechanisms")		
	(MH "Recovery")		
	(MH "Stress Disorders, Post-Traumatic")		
	(MH "Suffering")		
	(MH "Perception")		
	(MH "Psychological Well-Being")		
	(MH "Adaptation, Psychological")		

CINAHL Search strategy:

http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=rzh&bquery=(nurse+OR+((MH+%26quot%3bPractical+Nurses%26quot%3b))+OR+((MH+%26quot%3bClinical+Nurse+Specialists%26quot%3b))+OR+((MH+%26quot%3bStaff+Nurses%26quot%3b))+OR+((MH+%26quot%3bRegistered+Nurses%26quot%3b))+OR+((MH+%26quot%3bDiploma+Nurses%26quot%3b))+OR+((MH+%26quot%3bNurses%26quot%3b))+OR+nurs*+OR+midwife+OR+((MH+%26quot%3bNurse+Midwives%26quot%3b))+OR+((MH+%26quot%3bMidwives%26quot%3b))+OR+midwi*)+AND+(experience+OR+((MH+%26quot%3bWork+Experiences%26quot%3b))+OR+((MH+%26quot%3bReflection%26quot%3b))+OR+experienc*+OR+stress+OR+((MH+%26quot%3bStress%26quot%3b))+OR+((MH+%26quot%3bStress%2c+Occupational%26quot%3b))+OR+((MH+%26quot%3bCritical+Incident+Stress%26quot%3b))+OR+((MH+%26quot%3bStress%2c+Psychological%26quot%3b))+OR+((MH+%26quot%3bStress%2c+Physiological%26quot%3b))+OR+trauma+OR+((MH+%26quot%3bTrauma%26quot%3b))+OR+trauma*+OR+anxiety+OR+((MH+%26quot%3bAnxiety%26quot%3b))+OR+resilience+OR+((MH+%26quot%3bHardiness%26quot%3b))+OR+resilien*+OR+coping+OR+((MH+%26quot%3bCoping%26quot%3b))+OR+((MH+%26quot%3bDefense+Mechanisms%26quot%3b))+OR+cop*+OR+(%26quot%3bmov*+on%26quot%3b)+OR+recovery+OR+((MH+%26quot%3bRecovery%26quot%3b))+OR+recov*+OR+response+OR+respon*+OR+(post+traumatic+growth)+OR+((MH+%26quot%3bStress+Disorders%2c+Post-Traumatic%26quot%3b))+OR+distress+OR+((MH+%26quot%3bSuffering%26quot%3b))+OR+distress*+OR+perception+OR+((MH+%26quot%3bPerception%26quot%3b))+OR+((MH+%26quot%3bPsychological+Well-Being%26quot%3b))+OR+perception*+OR+psychological+OR+((MH+%26quot%3bAdaptation%2c+Psychological%26quot%3b))+OR+psychosocial)+AND+((critical+incident)+OR+((MH+%26quot%3bSentinel+Event%26quot%3b))+OR+((MH+%26quot%3bAdverse+Drug+Event%26quot%3b))+OR+incident*+OR+event*+OR+error*+OR+((MH+%26quot%3bHealth+Care+Errors%26quot%3b))+OR+((MH+%26quot%3bMedication+Errors%26quot%3b))+OR+((MH+%26quot%3bTreatment+Errors%26quot%3b))+OR+(%26quot%3bclinical+incident*%26quot%3b)+OR+(%26quot%3badverse+event*%26quot%3b)+OR+((MH+%26quot%3bAdverse+Health+Care+Event%26quot%3b))+OR+(%26quot%3bmedical+error*%26quot%3b)+OR+(%26quot%3bmedication+error*%26quot%3b)+OR+(%26quot%3bnear+miss%26quot%3b)+OR+(%26quot%3bseverity+assessment+code%26quot%3b))+AND+qualitative&cli0=DT1&clv0=201301-201812&type=1&site=ehost-live&scope=site

CINAHL Search Results:

1872 (13/08/2018)

CINAHL Limiters

- Published Date: 2013-2018 (735)
- English Language (692)

CINAHL Search Results after limiters:

Included: 692 excluded: 1176

CINAHL Search Results after titles screened:

Records after titles screened: 89 excluded: 588 (not related to PICoS)

CINAHL Search Results after abstract screened:

Records after abstracts screened: 27 excluded: 62 (not related to PICoS)

CINAHL Search Results after full text review for inclusion/exclusion criteria:

Records after full text review: 10 excluded: 17 (not meeting inclusion criteria)

Logic Grid with Keywords and Index Terms or Subject Headings (MEDLINE)

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse	experience	critical incident	qualitative
midwife	stress	incident	
(MH "Nurses")	trauma	error	
(MH "Nursing Staff")	anxiety	event	
(MH "Nurse Midwives")	resilince	clinical incident	
	coping	adverse event	
	moving on	medical error	
	recovery	medication error	
	response	near miss	
	post-traumatic growth	severity assessment code	
	distress	*(MH "Patient Harm")*	
	perception	*(MH "Medication Errosr")*	
	psychological	*(MH "Medical Errors")*	
	psychosocial		
	(MH "Life Change Events")		
	(MH "Stress, physiological")		
	(MH "Stress, psychological)		
	(MH "Stress Disorders, Traumatic")		
	(MH " Psychological Trauma")		
	(MH "Anxiety")		
	(MH Resilience, Psychological")		
	(MH "Adaptation, Psychological")		
	(MH "Defense Mechanisms")		
	(MH "Traumatic Disorders, Post-Traumatic")		
	(MH "Perception")		
	(MH "Psychological Phenomena and Precesses")		
	(MH "Emotional Adjustment)		

Subject Major headings/Minor headings excluded:

Logic Grid with Keywords and Index Terms Qualified with Field Codes and Wildcard Characters (MEDLINE)

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse (nurs*)	experience (experienc*)	critical incident	qualitative
midwife (midwi*)	stress	incident (incident*)	
(MH "Nurses")	trauma (trauma*)	error (error*)	
(MH "Nursing Staff")	anxiety	event (event*)	
(MH "Nurse Midwives")	resilience (resilien*)	"clinical incident*"	
	coping (cop*)	"adverse event*"	
	"mov* on"	"medical error*"	
	recovery (recov*)	"medication error*"	
	response (respon*)	"near miss"	
	post-traumatic growth	"severity assessment code"	
	distress (distress*)	*(MH "Patient Harm")*	
	perception (perception*)	*(MH "Medication Errosr")*	
	psychological	*(MH "Medical Errors")*	
	psychosocial		
	(MH "Life Change Events")		
	(MH "Stress, physiological")		
	(MH "Stress, psychological)		
	(MH "Stress Disorders, Traumatic")		
	(MH " Psychological Trauma")		
	(MH "Anxiety")		
	(MH Resilience, Psychological")		
	(MH "Adaptation, Psychological")		
	(MH "Defense Mechanisms")		
	(MH "Traumatic Disorders, Post-Traumatic")		
	(MH "Perception")		

Note: No specific field codes were selected when searching

MEDLINE Search strategy:

http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cmedm&bquery=(nurse+OR+((MH+%26quot%3bNurses%26quot%3b))+OR+((MH+%26quot%3bNursing+Staff%26quot%3b))+OR+midwife+OR+((MH+%26quot%3bNurse+Midwives%26quot%3b))+OR+nurs*+OR+midwi*)+AND+(experience+OR+((MH+%26quot%3bLife+Change+Events%26quot%3b))+OR+experienc*+OR+stress+OR+((MH+%26quot%3bStress%2c+Physiological%26quot%3b))+OR+((MH+%26quot%3bStress%2c+Psychological%26quot%3b))+OR+((MH+%26quot%3bStress+Disorders%2c+Traumatic%26quot%3b))+OR+trauma+OR+((MH+%26quot%3bPsychological+Trauma%26quot%3b))+OR+trauma*+OR+anxiety+OR+((MH+%26quot%3bAnxiety%26quot%3b))+OR+resilience+OR+((MH+%26quot%3bResilience%2c+Psychological%26quot%3b))+OR+resilien*+OR+coping+OR+((MH+%26quot%3bAdaptation%2c+Psychological%26quot%3b))+OR+((MH+%26quot%3bDefense+Mechanisms%26quot%3b))+OR+cop*+OR+(%26quot%3bmov*+on%26quot%3b)+OR+recovery+OR+recov*+OR+response+OR+respon*+OR+((MH+%26quot%3bStress+Disorders%2c+Post-Traumatic%26quot%3b))+OR+(%26quot%3bpost+traumatic+growth%26quot%3b)+OR+distress+OR+distress*+OR+perception+OR+((MH+%26quot%3bPerception%26quot%3b))+OR+perception*+OR+psychological+OR+((MH+%26quot%3bPsychological+Phenomena+and+Processes%26quot%3b))+OR+((MH+%26quot%3bEmotional+Adjustment%26quot%3b))+OR+psychosocial)+AND+((critical+incident)+OR+incident*+OR+event*+OR+error*+OR+((MH+%26quot%3bPatient+Harm%26quot%3b))+OR+((MH+%26quot%3bMedication+Errors%26quot%3b))+OR+((MH+%26quot%3bMedical+Errors%26quot%3b))+OR+(%26quot%3bclinical+incident*%26quot%3b)+OR+(%26quot%3badverse+event*%26quot%3b)+OR+(%26quot%3bmedical+error*%26quot%3b)+OR+(%26quot%3bmedication+error*%26quot%3b)+OR+(%26quot%3bnear+miss%26quot%3b)+OR+(%26quot%3bseverity+assessmemt+code%26quot%3b))+AND+qualitative&cli0=DT1&clv0=201301-201812&cli1=LA1&clv1=Y&type=1&site=ehost-live&scope=site

MEDLINE Search Results:

2366 (13/09/2018)

MEDLINE Limiters

- Published Date: 2013-2018 (1149)
- English Language (1122)

MEDLINE Search Results after limiters:

Included: 1122 excluded: 1244

MEDLINE Search Results after duplicates removed:

Included: 792 excluded: 330

MEDLINE Search Results after title screened:

Records after titles screened: 28 excluded: 764 (not related to PICoS)

MEDLINE Search Results after abstracts screened:

Records after abstracts screened: 10 excluded: 18 (not related to PICoS)

MEDLINE Search Results after full text review for inclusion/exclusion criteria:

Records after full text review: 6 excluded: 4 (not meeting inclusion criteria)

Logic Grid with Keywords and Index Terms or Subject Headings (PsycInfo)

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse	experience	critical incident	qualitative
midwife	stress	incident	
DE "Nurses"	trauma	error	
DE "Midwifery"	anxiety	event	
	resilince	clinical incident	
	coping	adverse event	
	moving on	medical error	
	recovery	medication error	
	response	near miss	
	post-traumatic growth	severity assessment code	
	distress	*DE "Patient Safety"*	
	perception		
	psychological		
	psychosocial		
	DE "Life Experiences"		
	DE "Experiences (Events)"		
	DE "Stress"		
	DE "Occupational Stress"		
	DE "Psychological Stress"		
	DE "Physiological Stress"		
	DE "Trauma"		
	DE "Emotional Trauma"		
	DE "Anxiety"		
	DE "Resilience (Psychological)		
	DE "Stress and Coping Measures"		
	DE " Coping Behavior"		
	DE "Post-Traumatic Stress"		
	DE "Posttraumatic Growth"		
	DE "Distress"		
	DE "Perception"		

Logic Grid with Keywords and Index Terms Qualified with Field Codes and Wildcard Characters (PsycINFO)

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse (nurs*)	experience (experienc*)	critical incident	qualitative
midwife (midwi*)	stress	incident (incident*)	
DE "Nurses"	trauma (trauma*)	error (error*)	
DE "Midwifery"	anxiety	event (event*)	
	resilience (resilien*)	"clinical incident*"	
	coping (cop*)	"adverse event*"	
	"mov* on"	"medical error*"	
	recovery (recov*)	"medication error*"	
	response (respon*)	"near miss"	
	post-traumatic growth	"severity assessment code"	
	distress (distress*)	*DE "Patient Safety"*	
	perception (perception*)		
	psychological		
	psychosocial		
	DE "Life Experiences"		
	DE "Experiences (Events)"		
	DE "Stress"		
	DE "Occupational Stress"		
	DE "Psychological Stress"		
	DE "Physiological Stress"		
	DE "Trauma"		
	DE "Emotional Trauma"		
	DE "Anxiety"		
	DE "Resilience (Psychological)		
	DE "Stress and Coping Measures"		
	DE " Coping Behavior"		
	DE "Post-Traumatic Stress"		
	DE "Posttraumatic Growth"		
	DE "Distress"		
	DE "Perception"		

PsycInfo Search strategy:

http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&bquery=(nurse+OR+(DE+%26quot%3bNurses%26quot%3b)+OR+nurs*+OR+midwife+OR+(DE+%26quot%3bMidwifery%26quot%3b)+OR+midwi*)+AND+(experience+OR+(DE+%26quot%3bLife+Experiences%26quot%3b)+OR+(DE+%26quot%3bExperiences+(Events)%26quot%3b)+OR+experienc*+OR+stress+OR+(DE+%26quot%3bStress%26quot%3b)+OR+(DE+%26quot%3bOccupational+Stress%26quot%3b)+OR+(DE+%26quot%3bPsychological+Stress%26quot%3b)+OR+(DE+%26quot%3bPhysiological+Stress%26quot%3b)+OR+trauma+OR+(DE+%26quot%3bTrauma%26quot%3b)+OR+(DE+%26quot%3bEmotional+Trauma%26quot%3b)+OR+anxiety+OR+(DE+%26quot%3bAnxiety%26quot%3b)+OR+resilience+OR+(DE+%26quot%3bResilience+(Psychological)%26quot%3b)+OR+trauma*+OR+resilien*+OR+coping+OR+(DE+%26quot%3bStress+and+Coping+Measures%26quot%3b)+OR+(DE+%26quot%3bCoping+Behavior%26quot%3b)+OR+cop*+OR+(%26quot%3bmov*+on%26quot%3b)+OR+recovery+OR+recov*+OR+response+OR+respon*+OR+(%26quot%3bpost+traumatic+growth%26quot%3b)+OR+(DE+%26quot%3bPost-Traumatic+Stress%26quot%3b)+OR+(DE+%26quot%3bPosttraumatic+Growth%26quot%3b)+OR+distress+OR+(DE+%26quot%3bDistress%26quot%3b)+OR+distress*+OR+perception+OR+(DE+%26quot%3bPerception%26quot%3b)+OR+perception*+OR+psychological+OR+psychosocial)+AND+((critical+incident)+OR+incident*+OR+event*+OR+error*+OR+(DE+%26quot%3bPatient+Safety%26quot%3b)+OR+(%26quot%3bclinical+incident*%26quot%3b)+OR+(%26quot%3badverse+event*%26quot%3b)+OR+(%26quot%3bmedical+error*%26quot%3b)+OR+(%26quot%3bmedication+error*%26quot%3b)+OR+(%26quot%3bnear+miss%26quot%3b)+OR+(%26quot%3bseverity+assessment+code%26quot%3b))+AND+qualitative&cli0=PY&clv0=201301-201812&type=1&site=ehost-live&scope=site

Psycinfo Search Results:

1806 (13/09/2018)

PsycInfo Limiters

- Published Date: 2013-2018 (683)
- English Language (677)

PsycInfo Search Results after limiters:

Included: 677 excluded: 1129

PsycINFO Search Results after duplicates removed:

Included: 381 excluded: 1129

PsycINFO Search Results after title screened:

Records after titles screened: 10 excluded: 371 (not related to PICoS)

PsycINFO Search Results after abstracts screened:

Records after abstracts screened: 3 excluded: 7 (not related to PICoS)

PsycINFO Search Results after full text review for inclusion/exclusion criteria:

Records after full text review: 1 excluded: 2 (not meeting inclusion criteria)

Logic Grid with Keywords and Index Terms or Subject Headings Nursing and Allied Health ProQuest

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse	experience	critical incident	qualitative
midwife	stress	incident	
Exact("nurses")	trauma	error	
Exact("midwifery")	anxiety	event	
	resilince	clinical incident	
	coping	adverse event	
	moving on	medical error	
	recovery	medication error	
	response	near miss	
	post-traumatic growth	severity assessment code	
	distress	*Exact("critical incidents")*	
	perception	*Exact("medical errors")*	
	psychological	*Exact("medication errors")*	
	psychosocial	*Exact("near misses")*	
	Exact("affective experiences" OR "emotional experiences" OR "experience")		
	Exact("stress, physiological" OR "stress, psychological" OR "stressful events")		
	Exact("traumatic stress" OR "traumatic incidents" OR "traumatic life events")		
	Exact("anxiety")		
	Exact("resilience, psychological" OR "resilience")		
	Exact("emotional coping" OR "coping strategies" OR "coping behavior" OR "coping style" OR "coping" OR "coping skills")		
	Exact("recovery")		
	Exact("post-traumatic growth")		
	Exact("perceptions" OR "perception")		
	Exact("psychological stress" OR "psychological trauma" OR "psychological distress")		
	Exact("psychosocial wellbeing")		

Logic Grid with Keywords and Index Terms Qualified with Field Codes and Wildcard Characters (ProQuest)

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse (nurs*)	experience (experienc*)	critical incident	qualitative
midwife (midwi*)	stress	incident (incident*)	
Exact("nurses")	trauma (trauma*)	error (error*)	
Exact("midwifery")	anxiety	event (event*)	
	resilience (resilien*)	"clinical incident*"	
	coping (cop*)	"adverse event*"	
	"mov* on"	"medical error*"	
	recovery (recov*)	"medication error*"	
	response (respon*)	"near miss"	
	post-traumatic growth	"severity assessment code"	
	distress (distress*)	*Exact("critical incidents")*	
	perception (perception*)	*Exact("medical errors")*	
	psychological	*Exact("medication errors")*	
	psychosocial	*Exact("near misses")*	
	Exact("affective experiences" OR "emotional experiences" OR "experience")		
	Exact("stress, physiological" OR "stress, psychological" OR "stressful events")		
	Exact("traumatic stress" OR "traumatic incidents" OR "traumatic life events")		
	Exact("anxiety")		
	Exact("resilience, psychological" OR "resilience")		
	Exact("emotional coping" OR "coping strategies" OR "coping behavior" OR "coping style" OR "coping" OR "coping skills")		
	Exact("recovery")		
	Exact("post-traumatic growth")		
	Exact("perceptions" OR "perception")		
	Exact("psychological stress" OR "psychological trauma" OR "psychological distress")		
	Exact("psychosocial wellbeing")		

ProQuest Search strategy:

qualitative AND ("critical incident*" OR incident OR incident* OR Exact("critical incidents") OR noft(error) OR noft(error*) OR noft(event) OR noft(event*) OR noft("clinical incident*") OR noft("adverse event*") OR noft("medical error*") OR Exact("medical errors") OR noft("medication error*") OR Exact("medication errors") OR noft("near miss") OR Exact("near misses") OR noft("severity assessment code")) AND (noft(experience) OR noft(experienc*) OR noft(stress) OR Exact("affective experiences" OR "emotional experiences" OR "experience") OR Exact("stress, physiological" OR "stress, psychological" OR "stressful events") OR noft(trauma) OR noft(trauma*) OR noft(anxiety) OR Exact("traumatic stress" OR "traumatic incidents" OR "traumatic life events") OR Exact("anxiety") OR noft(resilience) OR Exact("resilience, psychological" OR "resilience") OR noft(resilien*) OR noft(coping) OR noft(cop*) OR Exact("emotional coping" OR "coping strategies" OR "coping behavior" OR "coping style" OR "coping" OR "coping skills") OR noft(recovery) OR noft("mov* on") OR noft(recov*) OR Exact("recovery") OR noft(response) OR noft("post traumatic growth") OR noft(respon*) OR Exact("post-traumatic growth") OR noft(distress) OR noft(perception) OR noft(distress*) OR Exact("perceptions" OR "perception") OR noft(perception*) OR Exact("psychological stress" OR "psychological trauma" OR "psychological distress") OR noft(psychological) OR noft(psychosocial) OR Exact("psychosocial wellbeing")) AND (noft(nurse) OR noft(nurs*) OR noft(midwife) OR noft(midwi*) OR Exact("nurses") OR Exact("midwifery"))

ProQuest Search Results:

7664 (21/09/2018)

ProQuest Limiters

- Published Date: 2013-2018 (1881)
- English Language (1850)

ProQuest Search Results after limiters:

Included: 1850 excluded: 5814

ProQuest Search Results after duplicates removed

Included: 1457 excluded: 393

ProQuest Search Results after titles screened

Records after titles screened: 23 excluded: 1434 (not related to PICoS)

ProQuest Search Results after articles screened

Records after abstracts screened: 9 excluded: 14 (not related to PICoS)

ProQuest Search Results after full text review for inclusion/exclusion criteria:

Records after full text review: 3 excluded: 6 (not meeting inclusion criteria)

Logic Grid with Keywords and Index Terms or Subject PubMed

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse	experience	critical incident	qualitative
midwife	stress	incident	
(MH "Nurses")	trauma	error	
(MH "Nursing Staff")	anxiety	event	
(MH "Nurse Midwives")	resilince	clinical incident	
	coping	adverse event	
	moving on	medical error	
	recovery	medication error	
	response	near miss	
	post-traumatic growth	severity assessment code	
	distress	*(MH "Patient Harm")*	
	perception	*(MH "Medication Errosr")*	
	psychological	*(MH "Medical Errors")*	
	psychosocial		
	(MH "Life Change Events")		
	(MH "Stress, physiological")		
	(MH "Stress, psychological)		
	(MH "Stress Disorders, Traumatic")		
	(MH " Psychological Trauma")		
	(MH "Anxiety")		
	(MH Resilience, Psychological")		
	(MH "Adaptation, Psychological")		
	(MH "Defense Mechanisms")		
	(MH "Traumatic Disorders, Post-Traumatic")		
	(MH "Perception")		
	(MH "Psychological Phenomena and Precesses")		
	(MH "Emotional Adjustment)		
	(MH "Life Change Events")		
	(MH "Stress, physiological")		

Logic Grid with Keywords and Index Terms Qualified with Field Codes and Wildcard Characters PubMed

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse (nurs*)	experience (experienc*)	critical incident	qualitative
midwife (midwi*)	stress	incident (incident*)	
(MH "Nurses")	trauma (trauma*)	error (error*)	
(MH "Nursing Staff")	anxiety	event (event*)	
(MH "Nurse Midwives")	resilience (resilien*)	"clinical incident*"	
	coping (cop*)	"adverse event*"	
	"mov* on"	"medical error*"	
	recovery (recov*)	"medication error*"	
	response (respon*)	"near miss"	
	post-traumatic growth	"severity assessment code"	
	distress (distress*)	*(MH "Patient Harm")*	
	perception (perception*)	*(MH "Medication Errosr")*	
	psychological	*(MH "Medical Errors")*	
	psychosocial		
	(MH "Life Change Events")		
	(MH "Stress, physiological")		
	(MH "Stress, psychological)		
	(MH "Stress Disorders, Traumatic")		
	(MH " Psychological Trauma")		
	(MH "Anxiety")		
	(MH Resilience, Psychological")		
	(MH "Adaptation, Psychological")		
	(MH "Defense Mechanisms")		
	(MH "Traumatic Disorders, Post-Traumatic")		
	(MH "Perception")		
	(MH "Psychological Phenomena and Precesses")		
	(MH "Emotional Adjustment)		
	(MH "Life Change Events")		
	(MH "Stress, physiological")		

PubMed Search strategy:

(nurse OR ((MH "Nurses")) OR ((MH "Nursing Staff")) OR midwife OR ((MH "Nurse Midwives")) OR nurs* OR midwi*) AND (experience OR ((MH "Life Change Events")) OR experienc* OR stress OR ((MH "Stress, Physiological")) OR ((MH "Stress, Psychological")) OR ((MH "Stress Disorders, Traumatic")) OR trauma OR ((MH "Psychological Trauma")) OR trauma* OR anxiety OR ((MH "Anxiety")) OR resilience OR ((MH "Resilience, Psychological")) OR resilien* OR coping OR ((MH "Adaptation, Psychological")) OR ((MH "Defense Mechanisms")) OR cop* OR ("mov* on") OR recovery OR recov* OR response OR respon* OR ((MH "Stress Disorders, Post-Traumatic")) OR ("post traumatic growth") OR distress OR distress* OR perception OR ((MH "Perception")) OR perception* OR psychological OR ((MH "Psychological Phenomena and Processes")) OR ((MH "Emotional Adjustment")) OR psychosocial) AND ((critical incident) OR incident* OR event* OR error* OR ((MH "Patient Harm")) OR ((MH "Medication Errors")) OR ((MH "Medical Errors")) OR ("clinical incident*") OR ("adverse event*") OR ("medical error*") OR ("medication error*") OR ("near miss") OR ("severity assessmemt code")) AND qualitative

PubMed Search Results:

2511 (15/09/2018)

PubMed Limiters

- Published Date: 2013-2018 (1243)
- English Language (1216)

PubMed Search Results after limiters:

Included: 1216 excluded: 1295

PubMed Search Results after duplicates removed:

Included: 107 excluded: 1109

PubMed Search Results after title screened:

Records after titles screened: 2 excluded: 105 (not related to PICoS)

PubMed Search Results after abstracts screened:

Records after abstracts screened: 0 excluded: 2 (not related to PICoS)

Logic Grid with Keywords and Index Terms from Embase

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse	experience	critical incident	qualitative
midwife	stress	incident	
'nurse'/exp	trauma	error	
'midwife'/exp	anxiety	event	
	resilince	clinical incident	
	coping	adverse event	
	moving on	medical error	
	recovery	medication error	
	response	near miss	
	post-traumatic growth	severity assessment code	
	distress	*'medical error'/exp*	
	perception	*'adverse event'/exp*	
	psychological	*'sentinel event'/exp*	
	psychosocial	*'medication error'/exp*	
	'personal experience'/exp		
	'critical incident stress'/exp		
	'job stress'/exp		
	'physiological stress'/exp		
	'anxiety'/exp		
	'resilience'/exp		
	'coping behavior'/exp		
	'recovery'/exp		
	'stress'/exp'		
	'post traumatic growth'/exp		
	'psychological resilience'/exp		
	'defense mechanism'/exp		
	'pychosocial rehabilitation'/exp		

Logic Grid with Keywords and Index Terms Qualified with Field Codes and Wildcard Characters Embase

Population	Interest	Context	Study design
nurses and midwives	**experiences and perceptions**	**critical incidents**	**qualitative studies**
nurse (nurs*)	experience (experienc*)	"critical incident*"	qualitative
midwife (midwi*)	stress	incident (incident*)	
'nurse'/exp	trauma (trauma*)	error (error*)	
'midwife'/exp	anxiety	event (event*)	
	resilience (resilien*)	"clinical incident*"	
	coping (cop*)	"adverse event*"	
	"mov* on"	"medical error*"	
	recovery (recov*)	"medication error*"	
	response (respon*)	"near miss"	
	"post-traumatic growth"	"severity assessment code"	
	distress (distress*)	*'medical error'/exp*	
	perception (perception*)	*'adverse event'/exp*	
	psychological	*'sentinel event'/exp*	
	psychosocial	*'medication error'/exp*	
	'personal experience'/exp		
	'critical incident stress'/exp		
	'job stress'/exp		
	'physiological stress'/exp		
	'anxiety'/exp		
	'resilience'/exp		
	'coping behavior'/exp		
	'recovery'/exp		
	'stress'/exp'		
	'post traumatic growth'/exp		
	'psychological resilience'/exp		
	'defense mechanism'/exp		
	'pychosocial rehabilitation'/exp		

Embase Search strategy:

(('nurse'/exp OR 'nurse') OR ('midwife'/exp OR 'midwife') OR nurs* OR midwi*) AND (experience OR ('personal experience'/exp OR 'personal experience') OR experienc* OR stress OR ('critical incident stress'/exp OR 'critical incident stress') OR ('job stress'/exp OR 'job stress') OR ('physiological stress'/exp OR 'physiological stress') OR trauma OR trauma* OR ('anxiety'/exp OR 'anxiety') OR ('resilience'/exp OR 'resilience') OR resilien* OR coping OR ('coping behavior'/exp OR 'coping behavior') OR cop* OR 'mov* on' OR ('recovery'/exp OR 'recovery') OR recov* OR response OR ('stress'/exp OR 'stress') OR respon* OR ('post traumatic growth'/exp OR 'post traumatic growth') OR distress OR distress* OR perception OR perception* OR psychological OR ('psychological resilience'/exp OR 'psychological resilience') OR ('defense mechanism'/exp OR 'defense mechanism') OR psychosocial OR ('psychosocial rehabilitation'/exp OR 'psychosocial rehabilitation')) AND (incident OR incident* OR error OR ('medical error'/exp OR 'medical error') OR error* OR event OR ('adverse event'/exp OR 'adverse event') OR ('sentinel event'/exp OR 'sentinel event') OR event* OR 'adverse event*' OR 'clinical incident*' OR 'medical error*' OR 'medication error*' OR ('medication error'/exp OR 'medication error') OR 'near miss' OR 'severity assessment code' OR 'critical incident*') AND qualitative

Embase Search Results:

3782 (20/09/2018)

Embase Limiters

- Published Date: 2013-2018 (1995)
- English Language (1963)

Embase Search Results after limiters:

Included: 1963 excluded: 1819

Embase Search Results after duplicates removed:

Included: 979 excluded: 984

Embase Search Results after title screened:

Records after titles screened: 22 excluded: 957 (not related to PICoS)

Embase Search Results after abstracts screened:

Records after abstracts screened: 4 excluded: 18 (not related to PICoS)

Embase Search Results after full text review for inclusion/exclusion criteria:

Records after full text review: 0 excluded: 4 (not meeting inclusion criteria)

Appendix B Hand searching strategy

Hand Searching

Scopus citation searching: Significant Authors (identified from the search results)

Significant Authors				
Author	Documents identified	After limiters, abstract & title screening	full text screened	Included in quality appraisal
De Boer, Jacoba	7	1	0	0
Kable, Ashley	18	2	1	0
Khong, Betty	4	1	0	0
Ullstom, Susanne	3	0	0	0
Scott, Susan D.	19	4	1	0

Hand searching – Journals:

As identified from the search results.

Database Ulrich's web: Journals identified and searched with key terms incident, error and adverse event with limiters 2013-2018. The Journal of Clinical Nursing most frequently appeared in the database search and was nominated as the top nursing journal.for this protocol.

Significant Journals	Met inclusion criteria
International Journals for Quality in Health Care	0
Quality Management in Health Care	0
Journal of Nursing Care Quality Titles scanned (272) abstracts scanned (2)	0
Journal of Clincial Nursing incident 13, error 22, "adverse event" 61	0

Hand searching – Key Articles:

Screening the reference lists of studies selected for inclusion in the systematic literature review did not idenfiy any further publications that met the inclusion criteria.

Hand searching – Grey Literature

Step 1: Browsing websites relelvant to research questions with the following terms: "critical incident" / "adverse event" / "medical error"

Australian Commission for Safety and Quality in Health Care (n = 0)
https://www.safetyandquality.gov.au/

Australian Government Department of Health (n = 0)
http://www.health.gov.au/internet/main/publishing.nsf/Content/Home

Australian Nursing and Midwifery Board (n = 0)
https://www.nursingmidwiferyboard.gov.au/

Australian Institute of Health and Welfare (n = 0)
https://www.aihw.gov.au/

Step 2: Search of databases collating and indexing grey literature

Research online:
(nurse OR midwife) AND ("critical incident" OR "adverse event" OR "medical error" OR incident OR error) AND (experience OR perception) AND qualitative 01/01/13 – 16/10/2018
Total identified: 290 After title search: 2 After abstract search: 0

ProQuest Dissertations & Theses Global Database
noft(nurse OR midwife) AND noft("critical incident" OR "adverse event" OR "medical error") AND noft(experience) 2013-2018
Total identified: 15 After title search: 1 After abstract search: 1 Met inclusion criteria: 0

OpenGrey (www.opengrey.eu)
Only indexed up until 2012 and therefore not relevant because my limiters are 2013-2018

Grey Literature Report (www.greylit.org)
"critical incident: 1 / "adverse event": 1 / "medical error": 0 / "clinical incident": 0 / incident: 57
Total identified: 59 After title search: 0

Grey matters CADTH (Canadian Agency for Drugs and Technologies in Health)
(https://www.cadth.ca/resources/finding-evidence/grey-matters)
"critical incident: 12 / "adverse event" AND nurse OR midwife: 2 / "medical error": 13 / "clinical incident: 1
Total identified: 28 After title search: 0

ClinicalTrials.gov (https://clinicaltrials.gov/)
nurse OR midwife | "critical incident" OR "adverse event" OR "medical error"
Total identified: 28 After title search: 0

International Clinical Trials Registry Platform (ICTRP) (http://www.who.int/ictrp/search/en/
nurse OR midwife AND "critical incident"
Total identified: 12 After title search: 0

Step 3: Google Scholar:

nurse OR midwife AND "adverse event" OR "medical error" OR "critical incident"
2013-2018
https://scholar.google.com.au/scholar?start=0&q=nurse+OR+midwife+AND+%22adverse+event%22+OR+%22medical+error%22+OR+%22critical+incident%22&hl=en&as_sdt=0,5&as_ylo=2013&as_yhi=2018

Identified: 17700
scanned first 500 titles: identified: 17 (22 minus 5 duplicates = 17)
scanned abstract:6
met inclusion criteria: 0

Appendix C Quality appraisal results

Quality appraisal results

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Included Y/N
de Boer J., van Rikxoort S., Bakker A., & Smit B. (2014)	U	Y	Y	Y	Y	U	U	Y	Y	Y	7/10 Y
Ajri-Khameslou M., Abbaszadeh A., & Borhani F. (2017)	U	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Allen R., & Palk G. (2018)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Calvert I., & Benn C. (2015)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Cauldwell M., Chappell L., Murtagh G., & Bewley S. (2015)	U	Y	Y	Y	Y	U	U	Y	Y	Y	7/10 Y
Clark R., & McLean C. (2018)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Delacroix R. (2017)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Ferrús L., Silvestre C., Olivera G., & Mira J. (2016)	U	Y	Y	U	Y	U	U	Y	Y	Y	6/10 N
Kable A., Kelly B., & Adams J. (2018)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Laurent A., Aubert L., Chahraoui K., Bioy A., Mariage A., & Quenot J., et al. (2014)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Matandela M., & Matlakala M. (2016)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8/10 N
Mayer D., & Hamilton M. (2018)	Y	U	Y	Y	Y	N	N	Y	U	Y	6/10 N
Mohsenpour M., Hosseini M., Abbaszadeh A., Shahboulaghi F., & Khankeh H. (2018)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8/10 Y
Ndikwetepo M., & Strumpher N. (2017)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8/10 N
Rinaldi C., Leigheb F., Vanhaecht K., Donnarumma C., & Panella M. (2016)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8/10 Y
Sato M. (2015)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 N
Thornton Bacon C. (2017)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8/10 Y
Ullström S., Andreen Sachs M., Hansson J., Ovretveit J., & Brommels M. (2014)	Y	Y	Y	Y	Y	U	U	U	U	Y	6/10 N
Sheen K., Spiby H., & Slade P. (2016)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y
Chan S., Khong B., Pei Lin Tan L., He H., & Wang W. (2018)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8/10 Y

Quality criteria met: *Y = yes, N = no, U = unclear*

Appendix D Search summary table

***Search Table:** Summary table of articles that met PICoS and inclusion criteria and progressed to quality appraisal*
ICU = Intensive Care Unit / ED = Emergency Department / HCP = Health Care Professionals / MB = Melanie Buhlmann / BE = Dr Beverley Ewens / AR = Dr Amineh Rashidi / shaded = excluded

ID	Author/title	Design	Aims	Sample/Setting	Data collection/ analysis	Key findings	Quality appraisal score Included: yes/no
1	deBoer, J., Rikxoort, S., Bakker, A., & Smit, B. (2014) Critical incidents among intensive care unit nurses and their need for support: Explorative interviews	Qualitative explorative	To get insight into ICU nurses' most critical work-related incidents, their reactions, coping and perceived support	12 ICU nurses (6 female, 6 male) ICU in a university hospital in the Netherlands	Semi-structured interviews Thematic analysis	Both adequate and inadequate coping strategies, with long-lasting problems after critical incidents were reported. Feelings of anger, shame and powerlessness may have hindered recovery. Talking to colleagues was perceived helpful but their need for support was insufficiently met.	Yes MB 9/10 AR 7/10 Final 7/10
2	Kable, A., Kelly, B., & Adams, J. (2018) Effects of adverse events in health care on acute care nurses in an Australian context	Qualitative descriptive	To understand the effects of adverse events in health care on nurses in acute health care settings	10 acute care nurses (8 female, 2 male) Regional ED, acute mental health, ICU and stroke/neurology ward) Australia	Semi-structured interviews Independent data-driven analysis	Main themes of rescuing patients, effects on nurses, professional responsibility and needs of nurses. Nurses need organizational responses to adverse events, including the provision of information and collegial support.	Yes MB 8/10 AR 8/10 Final 8/10
3	Ajri-Khameslou, M., Abbaszadeh, A., & Borhani, F. (2017) Emergency nurses as second victims of error	Qualitative content analysis	To interpret the causes that place nurses in danger of errors in ED and the consequences resulting from confronting the errors	18 ED nurses (10 female, 8 male) 5 EDs in Iran	Semi-structured interviews Content analysis	Errors could create positive and negative impacts on ED nurses' attitude. Nurses are considered as victims of errors, they need support and protection to enhance their career.	Yes MB 8/10 AR 8/10 Final 8/10
4	Laurent, A., Aubert, L., Chahraoui, K., Bloy, A., Mariage, A., Quenot, J. P., & Capellier, G. (2014) Error in intensive care: Psychological repercussions and defence mechanisms among health professionals	Qualitative	To identify the psychological repercussions of an error and to understand defense mechanisms to cope	40 HCP including 20 ICU nurses & 20 ICU physicians	Semi-structured interviews Interpretive phenomenological analysis	HCP described feelings of guilt, shame, fear for the patient, loss of confidence, inability to verbalise one's error, questioning oneself and anger. HCP implemented defense mechanisms to fight the emotional load such as verbalization, developing skills and knowledge, rejecting responsibility and avoidance.	No MB 7/10 AR 8/10 Final 8/10 Unable to extract

***Search Table:** Summary table of articles that met PICoS and inclusion criteria and progressed to quality appraisal*
ICU = Intensive Care Unit / ED = Emergency Department / HCP = Health Care Professionals / MB = Melanie Buhlmann / BE = Dr Beverley Ewens / AR = Dr Amineh Rashidi / shaded = excluded

ID	Author/title	Design	Aims	Sample/Setting	Data collection/ analysis	Key findings	Quality appraisal score Included: yes/no
5	Chan, S., Khong, B., Pei Lin Tan, L., He, H. G., & Wang, W. (2018) Experiences of Singapore nurses as second victims: A qualitative study	Qualitative descriptive	To explore the psychological responses, coping strategies and support needs of Singapore nurses as second victims of adverse events	8 acute care nurses (6 female, 2 male) Acute care public hospital in Singapore	Semi-structured interviews Thematic analysis	The harmful effects of adverse events on nurses are long lasting. Second-victim nurses adopted various coping strategies to recover, such as personal support, turning to religion and need for forgiveness.	Yes MB 7/10 BE 8/10 Final 8/10
6	Delacroix, R. (2017) Exploring the experience of nurse practitioners who have committed medical errors: A phenomenological approach	Qualitative	To explore the experience of committing a medical error from the perspective of nurse practitioners (NP)	10 NPs USA	Semi-structured interviews Thematic analysis	The narratives strongly suggest that he NPs who err experience "second victim" phenomena. The paradox of error victimization, primacy of responsibility and mindfulness, yearning for forgiveness and a supportive other and coping with a new reality.	Yes MB 9/10 AR 8/10 Final 8/10
7	Ndikwetepo, M., & Strumpher, N. (2017) Midwives' experiences of stress due to emergency childbirths in a Namibian regional hospital	Qualitative, explorative, descriptive and contextual	To determine how midwives experienced stress when exposed to emergency childbirth stations	10 midwives (all female) Regional hospital maternity ward Namibia	In-depth interviews Content analysis	Midwives were exposed to unique stressors, which compromised their ability to cope. They experienced a variety of emotions such as anxiety, panic, sadness, relief, joy, guilt and self-blame.	No MB 10/10 BE 8/10 Final 8/10 3rd op AR not PICOs
8	Matandela, M., & Matlakala, M. (2016) Nurses' experiences of inpatients suicide in a general hospital	Qualitative explorative	To explore the experiences of nurses who cared for patients who successfully committed suicide whilst admitted	6 nurses Medical units South Africa	In-depth interviews Content analysis	Nurses experience feelings of shock, blame, condemnation, inadequacy and feared reprisal. Suggests a basis for development of support strategies to assist the nurses to deal with their emotions following the adverse event.	No MB 8/10 BE 8/10 Final 8/10 Methods too weak

Search Table: *Summary table of articles that met PICoS and inclusion criteria and progressed to quality appraisal*
ICU = Intensive Care Unit / ED = Emergency Department / HCP = Health Care Professionals / MB = Melanie Buhlmann / BE = Dr Beverley Ewens / AR = Dr Amineh Rashidi / shaded = excluded

ID	Author/title	Design	Aims	Sample/Setting	Data collection/ analysis	Key findings	Quality appraisal score Included: yes/no
9	Thornton Bacon, C. (2017) Nurses to their nurse leaders: We need your help after a failure to rescue patient death	Qualitative phenomenol ogical	To describe nurses' needs and how they are being met and not met after caring of patients who died after a failure to rescue	14 acute and critical care nurses (12 female, 2 male) Acute & critical care medical/surgical units of 4 hospitals in USA	Semi-structured interviews Colaizzi's 7 step analysis method	Coping mechanisms vary and are not uniformly effective across different groups. Many nurses did not receive the feedback and support that they needed from their nurse leaders. Immediate nurse leader support and follow-up debriefings should be mandatory.	Yes MB 7/10 BE 8/10 Final 8/10
10	Sheen, K., Spiby, H., & Slade, P. (2016) The experience and impact of traumatic perinatal event experiences in midwives: A qualitative investigation	Qualitative interview design	To provide an in-depth investigation into the experience, perceived impact and management of responses in midwives	35 midwives (34 female, 1 male) Contacted by the Royal College of Midwives to participate in England	Semi-structured interviews Template analysis	Event characteristics involved severe, unexpected episodes contributing to emotional upset, self-blame and vulnerability to investigative procedures. Participants valued talking about the event, but perceived support from colleagues and supervisors to be either absent or inappropriate.	Yes MB 8/10 BE 8/10 Final 8/10
11	Rinaldi, C., Leigheb, F., Vanhaecht, K., Donnarumma, C., & Panella, M. (2016) Becoming a "second victim" in health care: Pathway of recovery after adverse event	Quality-quantity strategy	To describe the physical and psycho-social impact of an adverse event on second victims, specify the recovery course and describe the actual assistance provided	33 HCP including 20 nurses 6 physicians 4 midwives 3 other HCP	Semi-structured interviews Qualitative analysis	The participants clearly remembered the adverse event and referred the physical and psychosocial symptoms. The support obtained was described as poor and inefficient. It is very important to execute valid interventional programs to support and train the HCPs.	No MB 2/10 BE 8/10 Final 8/10 Unable to extract
12	Mohsenpour, M., Hosseini, M., Abbaszadeh, A., Shahboulaghi, F. M., & Khankeh, H. (2018) Iranian nurses' experience of "being a wrongdoer"	Qualitative phenomeno-logical	To explore the meaning of Iranian nurses' experience of "being the wrongdoer"	8 nurses (6 female, 2 male) ICU, ED, onc, OT, med/surgical Iran	Semi-structured interviews Thematic analysis	The meaning of the "wrongdoer" has positive and negative aspects. Nurses were "wandering" in unpleasant feelings and a conscience court. They were constantly dwelling in their memories, regardless how much time passed since their error.	Yes MB 9/10 BE 8/10 Final 8/10

Search Table: *Summary table of articles that met PICoS and inclusion criteria and progressed to quality appraisal*
ICU = Intensive Care Unit / ED = Emergency Department / HCP = Health Care Professionals / MB = Melanie Buhlmann / BE = Dr Beverley Ewens / AR = Dr Amineh Rashidi / / shaded = excluded

ID	Author/title	Design	Aims	Sample/Setting	Data collection/ analysis	Key findings	Quality appraisal score Included: yes/no
13	Cauldwell, M., Chappell, L. C., Murtagh, G., & Bewley, S. (2015) Learning about maternal death and grief in the profession: a pilot qualitative study	Qualitative	To explore the impact of maternal death on maternity professionals and their related professional and personal needs	14 HCP including 4 midwives 5 doctors 5 consultants	Semi-structured Textual analysis	Maternal death has a major impact on HCPs feelings of grief, guilt and shame, which they were reluctant to talk about. HCPs expressed their desire for training to prepare themselves to respond effectively in the event. There was ambiguity about debriefing within a changing institutional culture.	No MB 8/10 AR 7/10 Final 7/10 Unable to extract
14	Ferrús, L., Silvestre, C., Olivera, G., & Mira, J. J. (2016) Qualitative study about the experiences of colleagues of HCP involved in an adverse event	Qualitative	To identify what occurs among HCP after an adverse event and what colleagues could do to help them	27 HCP including 15 physicians 12 nurses	Focus groups and metaplan Consensus search techniques	Second victims require support from colleagues and management, however, instead, many times they perceived rejection. They experienced repetitive thoughts, fear and loneliness.	No MB 7/10 AR 6/10 Final 6/10 weak
15	Ullström, S., Andreen Sachs, M., Hansson, J., Øvretveit, J., & Brommels, M. (2014) Suffering in silence: A qualitative study of second victims of adverse events	Qualitative	To investigate how HCP are affected by their involvement in adverse events with emphasis on the oranisational support they need and how well the organisation meets those needs	21 HCP including 10 physicians 9 nurses 2 allied health	Semi-structured interviews Content analysis	The impact on the HCP was related to the organisations response. Most lacked organisational support or they received support that was unstructured and unsystematic. Insufficient support and lack of feedback made it more difficult to emotionally process the event and reach closure.	No MB 5/10 BE 6/10 Final 6/10 weak
16	Clark, R., & McLean, C. (2018) The professional and personal debriefing needs of ward based nurses after involvement in a cardiac arrest	Qualitative explorative	To identify the needs of ward based nurses for debriefing after involvement in a cardiac arrest and to identify any barriers to participating in debriefing	7 acute care nurses (all female) Acute adult hospital wards England	Semi-structured interviews Framework analysis	Nurses expressed professional needs for reassurance and validation Nurses identified barriers to engaging in debriefing including lack of awareness and uncertainty about the role of the debrief.	Yes MB 10/10 AR 8/10 Final 8/10

Search Table: *Summary table of articles that met PICoS and inclusion criteria and progressed to quality appraisal*

ICU = Intensive Care Unit / ED = Emergency Department / HCP = Health Care Professionals / MB = Melanie Buhlmann / BE = Dr Beverley Ewens / AR = Dr Amineh Rashidi / shaded = excluded

ID	Author/title	Design	Aims	Sample/Setting	Data collection/ analysis	Key findings	Quality appraisal score Included: yes/no
17	Calvert, I., & Benn, C. (2015) Trauma and the effect on the midwife	Qualitative narratology	To explore the effects of a traumatic practice experience on the midwifery practitioner	16 midwives New Zealand	Adapted biographical narrative interview Eclectic content analysis	Midwives felt blamed for unfortunate outcomes and felt their competence in practice was challenged. A breach of relational trust exacerbated and prolonged the initial psychological and physiological symptoms. The perpetrator of this betrayal of trust were orgnisational and clinical managers, medical and midwifery colleagues, woman and their families.	Yes MB 8/10 AR 8/10 Final 8/10
18	Mayer, D., & Hamilton, M. (2018) Critical incidents in health care	Qualitative descriptive	To explore the impact of critical incidents on a variety of HCP	11 HCP including 7 nurses 2 physicians 2 chaplains	Semi-structured interviews Thematic analysis	Effective navigational strategies are needed to enhance recovery so HCP can remain in the workplace. Workplace culture was found to be both a support and a barrier to navigation. Efforts to decrease barriers and build a supportive culture are needed.	No MB 6/10 BE 6/10 Final 6/10 weak
19	Sato, M. (2015) Nurse experiences of grief and coping in the ICU	Qualitative descriptive	To explore grief and coping amongst nurses working in a medical ICU	5 ICU nurses	Semi-structured interviews Pragmatic analysis	The nurses had unique grief experiences and their coping was individualised. The nurses were aware of the effects grief had on their personal and professional lives. All developed effective coping habits to manage their grief based on the support and camaraderie of their colleagues.	No MB 8/10 BE 8/10 Final 8/10 Not PICoS
20	Allen, R., & Palk, G. (2018) Development of recommendations and guidelines for strengthening resilience in emergency department nurses	Mixed methods	To understand the traumatic experiences that ED nurses are confronted with and understand the effects of workplace trauma on ongoing well-being	80 ED nurses (72 female, 8 male) Australia	Survey including open ended questions Thematic analysis	Workplace trauma lead to shock and hypervigilance Nurses described debriefing and peer support as beneficial to their resilience and coping. Suggestions were made for training to promote coping and resilience.	Yes MB 8/10 AR 8/10 Final 8/10

Appendix E Interview schedule

Proposed interview questions

Moving on after critical incidents in health care. A qualitative study of the experiences of nurses and midwives

SOUTH WEST CAMPUS
585 Robertson Drive, Bunbury
Western Australia 6230
☎ 134 328
www.ecu.edu.au

The following questions will guide the semi-structured interviews and address the aims and objectives of this study. Additional questions may be asked as a result of the concurrent data collection and analysis required for the interpretive descriptive methodology of this study.

Phase 1:
Thank you for participating in this study. Before we start the interview, may I please remind you that we are not here to discuss any details of the incident itself. This includes disclosure of names or other details that could identify your employer, colleagues, patients or any other person who was involved in the incident. If any details are disclosed, the interview will cease immediately and not recommence. Please confirm that you agree to these terms before we proceed. Do you have any questions before we start the interview?

Are/were you a registered nurse / enrolled nurse / registered midwife?

What clinical area were you working in when the critical incident happened?
Please specify: _____

Without disclosing any details about the critical incident, can you categorise what type of event you were involved in from this list here (see below)?

Do you remember how long ago the incident occurred? Please specify: _____

Phase 2:
Please tell me more about your experience of living with the impact of the critical incident you were involved in.

Please tell me how you felt at the time of the event.

Do you think you have been able to move past the impact of the critical incident? Please, tell me more about your experience with moving on.

Have you identified specific strategies that helped you move past the critical incident?

Please tell me more about the strategies that helped you to move on.

Can you explain how the experience of the critical incident has influenced your professional life?

Phase 3:
Additional questions arising from previous interviews as a result of the concurrent data collection and analysis consistent with interpretive descriptive methodology.

Proposed interview questions

List of critical incident categories

- ☐ Procedure involving the wrong patient of body part
- ☐ Suicide of an inpatient
- ☐ Retained instruments or other items after surgery
- ☐ Intravascular gas embolism
- ☐ Haemolytic blood transfusion reaction
- ☐ Medication error
- ☐ Maternal death
- ☐ Infant discharged to wrong family
- ☐ Complications associated with health-care delivery
- ☐ Delay in recognising/responding to clinical deterioration
- ☐ Complications of resuscitation
- ☐ Complications of an inpatient fall
- ☐ Infection control breach
- ☐ Sub-standard care
- ☐ Equipment failure
- ☐ Unexpected death
- ☐ Unsuccessful resuscitation attempt
- ☐ Death of a child
- ☐ Stillbirth
- ☐ Sudden infant death syndrome (SIDS)
- ☐ Violent trauma or assault (patient or staff)
- ☐ Trauma from elder abuse
- ☐ Trauma from child abuse
- ☐ Other (please specify in two or three words): _____

Arfanis, K., & Smith, A. (2012). Informal risk assessment strategies in health care staff: An unrecognized source of resilience? *Journal of Evaluation in Clinical Practice, 18*(6), 1140-1146. doi: 10.1111/j.1365-2753.2011.01759.x

de Boer, J., van Rikxoort, S., Bakker, A. B., & Smit, B. J. (2014). Critical incidents among intensive care unit nurses and their need for support: Explorative interviews. *Nursing in Critical Care, 19*(4), 166-174. doi: 10.1111/nicc.12020

Department of Health WA. (2015). Clinical incident management policy. Retrieved from http://www.health.wa.gov.au/circularsnew/attachments/1056.pdf

Healy, S., & Tyrrell, M. (2013). Importance of debriefing following critical incidents. *Emergency Nurse, 20*(10), 32-37.

McCool, W., Guidera, M., Stenson, M., & Dauphinee, L. (2009). The pain that binds us: Midwives' experiences of loss and adverse outcomes around the world. *Health Care for Women International, 30*(11), 1003-1013. doi: 10.1080/07399330903134455

Theophilos, T., Magyar, J., & Babl, F. E. (2009). Debriefing critical incidents in the paediatric emergency department: Current practice and perceived needs in Australia and New Zealand. *Emergency Medicine Australasia: EMA, 21*(6), 479-483. doi: 10.1111/j.1742-6723.2009.01231.x

Appendix F Recruitment invitation template

INVITATION FOR NURSES AND MIDWIVES
Have you been involved in a critical incident?

My name is Melanie Buhlmann and I am a Master of Nursing by Research student at Edith Cowan University (ECU) in Western Australia.

I am interested in talking to you about your experience of "moving on" after being involved in a critical incident, adverse event or clinical error. My study aims to learn from your experiences of "moving on" and **does not** intend to explore the incident, your employer, your colleagues or the patient details in any way. All of our discussions will be strictly confidential.

Do you think you have moved on after being involved in an incident at work in the capacity of a registered or enrolled nurse or a registered midwife? Were you employed in a clinical area outside of critical care, i.e. intensive care, high dependency, coronary care or emergency departments at the time? If your answer is yes, then please contact me for further information or for an obligation free, confidential chat on [redacted] or via e-mail [redacted]

This study has been approved by the ECU Human Research Ethics Committee (17398).

Appendix G Participant information letter

Participant information letter

Moving on after critical incidents in health care. A qualitative study of the experiences of nurses and midwives

About the researcher

My name is Melanie Buhlmann and I am undertaking this study as part of my Master of Nursing by Research at Edith Cowan University in Perth, Western Australia. The study will explore how nurses and midwives "move on" after living through the impact of critical incidents in health care. My inspiration to conduct research in this area originates from my own experience as a registered nurse since 1993 and is invigorated by my admiration of the indomitable spirit displayed by nursing and midwifery professionals in their everyday work.

Introduction

If you have been involved in a critical incident, adverse event or clinical incident, and think you were able to move past it, then I would like to invite you to participate in this study. For the scope of this study, a critical incident is defined as "a sudden unexpected event that has an emotional impact sufficient to overwhelm the usually effective coping skills of an individual and cause significant psychological stress". The study aims to capture your experience with "moving on" following the exposure to a critical event and does not intend to explore the incident. The focus of the study is on your perception of "moving on" and you will be asked not to disclose any details surrounding the incident or reveal any identifying information about your employer, your colleagues, a patient or any other person. Should you inadvertently disclose any details surrounding the incident, the interview will cease immediately and not recommence.

Benefits of the study

The aim of this study is to gain understanding of the impact a critical incident had on you as a nurse or midwife. I am keen to learn about the strategies that have helped you move past the event and would like to investigate if you have been able to remain in your area of professional practice following the incident. With your help, the findings of this study will provide a valuable source of reassurance and guidance for fellow clinicians who have been involved in critical incidents. It is expected that the findings will inform health care institutions, training organisations and nursing and midwifery education programs of the impact of critical incidents on nurses and midwives and promote adaptive strategies to move past the often unsettling experience.

Participants

To participate in this study, you need to be willing to share your experiences of moving on after your involvement in a critical incident. You need to have been involved in the incident or event at work in the capacity of a registered or enrolled nurse or a registered midwife in a clinical area outside of intensive care, high dependency, coronary care or emergency units. If you were involved in an incident that is currently going through legal proceedings or is under review by an institution or a disciplinary board, you will not be eligible to participate in this study.

What will you be required to do?

This study involves the collection of information through interviews. Each interview will occur at a mutually convenient time and place and will take approximately 30 to 60 minutes. During the interview, you will be asked about your experience of moving on following the incident, but the details of the incident will be explored. The interview will be audio-taped and transcribed for analysis by the researcher. Following analysis of your transcript, you will receive a written narrative of the researcher's interpretation of

Participant information letter

your experience for verification and an opportunity to comment during a second brief meeting. The results of the research project will be reported in a thesis and published as journal articles. Publications will not include any information that may identify you and you will be able to obtain a copy of the journal article.

Risks of taking part in this study
Participation is voluntary and you may leave the study at any time. The information you have provided will be destroyed and will not be included in the findings of the study. You may elect not to answer specific questions that may provoke feelings of discomfort and may request to conclude the interview at any time. Strategies will be in place to manage emotional discomfort during and following the interview and you will be provided a list of counselling services.

Confidentiality
All personal information will be treated strictly confidential and will not be made available to anyone who is not part of this study. Although the findings of this research may be published, your personal information will be completely de-identified and pseudo names will be used. All notes and documents will be stored securely as per the data management policy at Edith Cowan University. Any electronic information will be password protected. This study has been approved by the Human Research Ethics Committee of Edith Cowan University, consistent with the National Statement on Ethical Conduct in Human Research (National Health and Medical Reseach Council, 2015) and the Privacy Act (1988).

What to do next
Are you interested to participate in this study? Please contact me for details about the next step. You will be under no obligation to take part in this study. Deciding not to participate in this research project will not affect your relationship with Edith Cowan University or with the researcher.

Melanie Buhlmann [redacted]

Under the supervision of:
Dr Beverley Ewens b.ewens@ecu.edu.au
Dr Nick Gibson n.gibson@ecu.edu.au
Dr Jennifer Sharp j.sharp@ecu.edu.au

If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact:

Research Ethics Officer
Edith Cowan University
270 Joondalup Drive
Joondalup WA 6027
Phone: (08) 6304 2170
E-mail: research.ethics@ecu.edu.au

Thank you for reading this information sheet and for considering to participate in my research project.

Kind regards, Melanie Buhlmann

Participant information letter

SOUTH WEST CAMPUS

Counselling Details

Talking about your experiences of critical incidents at work may provoke feelings of discomfort. It is important that you recognise any emotional discomfort and contact a counselling service near you.

You may get in touch with your Employee Assistance Program (EAP) at work or make an appointment to see your doctor. Below is a list of alternative contact details for regional and metropolitan areas of Western Australia (WA) and specifically for your area of residence.

Relationships Australia **1300 364 277**

Counselling services in Albany, Bunbury, Ellenbrook, Fremantle, Gosnells, Joondalup, Kwinana, Mandurah, Midland, Northam, South Hedland and West Leederville

Headspace **(08) 9027 0100**

Counselling services in Albany, Bunbury, Rockingham, Armadale, Fremantle, Osborne Park, Midland, Kalgoorlie, Geraldton and Broome

Life Line **13 11 14**

24-hour crisis support – all areas

Mental Health Emergency Response Line **(08) 9224 888 / 1300 555 788**

Metropolitan Area

Rurallink **1800 552 002**

After hours mental health service for rural and regional communities of WA

Other counselling service available in the participant's area: _____ (*specify*)

Thank you and kind regards, Melanie Buhlmann

[redacted]

Appendix H Newspaper advertisement

INVITATION FOR NURSES AND MIDWIVES

Have you been involved in a critical incident?

AUSTRALIA ECU EDITH COWAN UNIVERSITY

My name is Melanie Buhlmann and I am a Master of Nursing by Research student at Edith Cowan University (ECU) in Western Australia.

I am interested in talking to you about your experience of "moving on" after being involved in a critical incident, adverse event or clinical error. My study aims to learn from your experiences of "moving on" and **does not** intend to explore the incident, your employer, your colleagues or the patient details in any way. All of our discussions will be strictly confidential.

Do you think you have moved on after being involved in an incident at work in the capacity of a registered or enrolled nurse or a registered midwife? Were you employed in a clinical area outside of critical care, i.e. intensive care, high dependency, coronary care or emergency departments at the time? If your answer is yes, then please contact me for further information or for an obligation free, confidential chat on (08) [redacted]

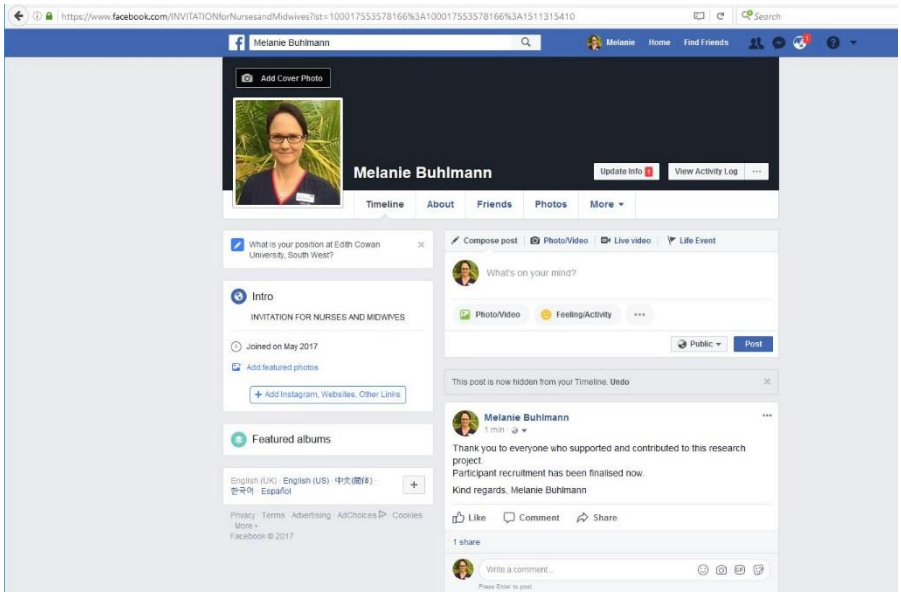
https://www.facebook.com/INVITATIONforNursesandMidwives

This study has been approved by the ECU Human Research Ethics Committee (17398).

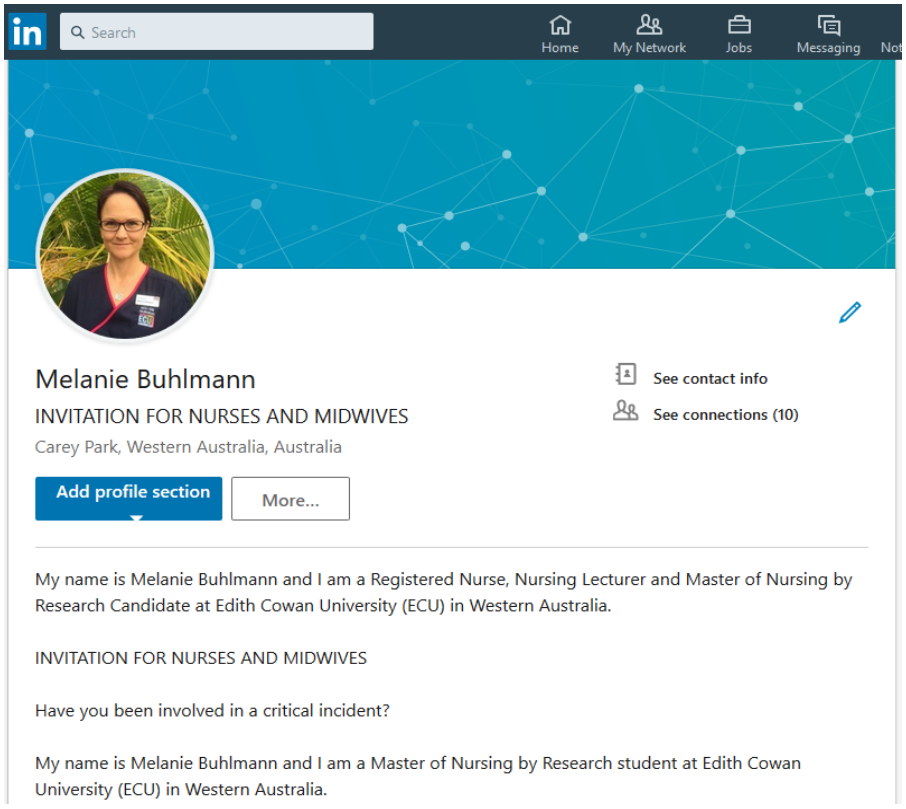
3540014

Appendix I Online profiles

Facebook:



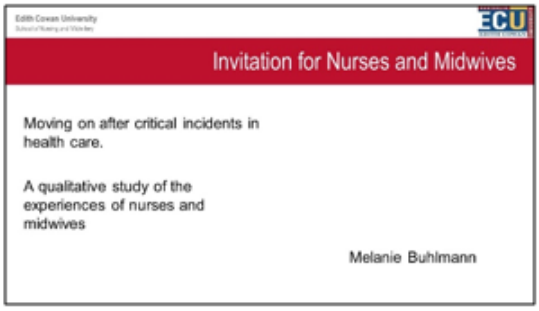
LinkedIn:



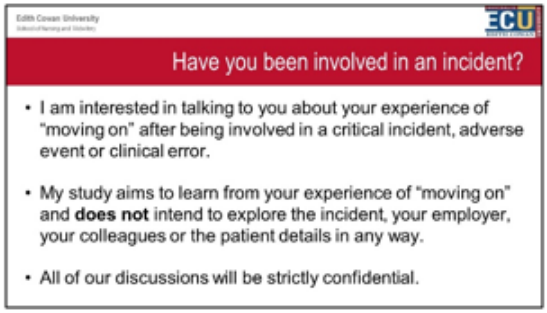
Appendix J Personal video message

To view the short personal invitation, please click here (2.11 minutes):

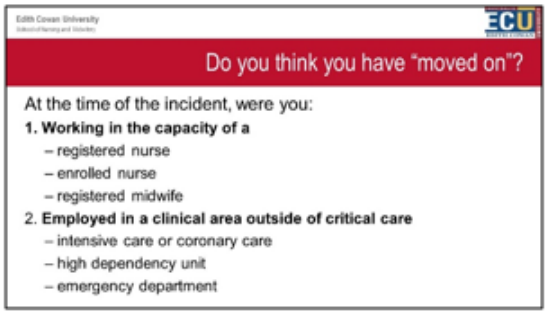
Slide 1



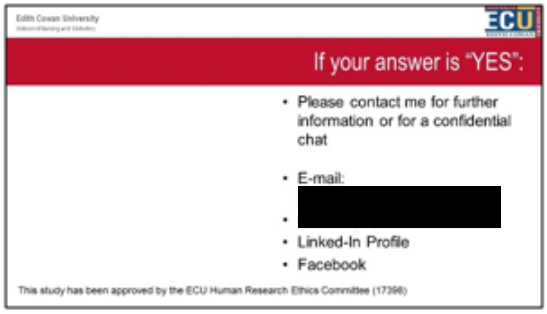
Slide 2



Slide 3



Slide 4



Link: http://mylecture.video.ecu.edu.au/relay/2017/Recruitment_Video_Final_-_20170602_123158_7%280%29.html

Appendix K Consent form

Statement and consent form

Moving on after critical incidents in health care.

A qualitative study of the experiences of nurses and midwives

I, _____ *(please print full name)*
have read and understood the participant information letter for this study.

1. I have been provided with the contact details of the researcher and understand that I can direct any questions about the study to the researcher.

2. I recognise that I am at liberty to withdraw from this study at any time and that my confidentiality will be maintained at all times. Although the results of this study may be published, my personal view and experiences will be completely de-identified and pseudo names will be used.

3. I realise that the contribution I make to this study assists with research into the experience of nurses and midwives who have moved on after living through the impact of a critical incident in health care. I appreciate that there may be no direct benefit to me personally from this research.

4. I understand that by consenting to participate in this study, I am agreeing not to disclose any details surrounding the incident or reveal any identifying information about my employer, my colleagues, the patient or any other person. Should I inadvertently disclose any details surrounding the incident, the interview will cease immediately and not recommence.

5. I understand that this study has been approved by the Edith Cowan University ethics committee consistent with the National Statement on Ethical Conduct in Human Research (National Health and Medical Reseach Council, 2015) and the Privacy Act (1988).

Participant's signature _____ Date _____

I, **Melanie Buhlmann** have thoroughly explained the study process to the participant, who indicated that the purpose of the study and the related risks have been understood.

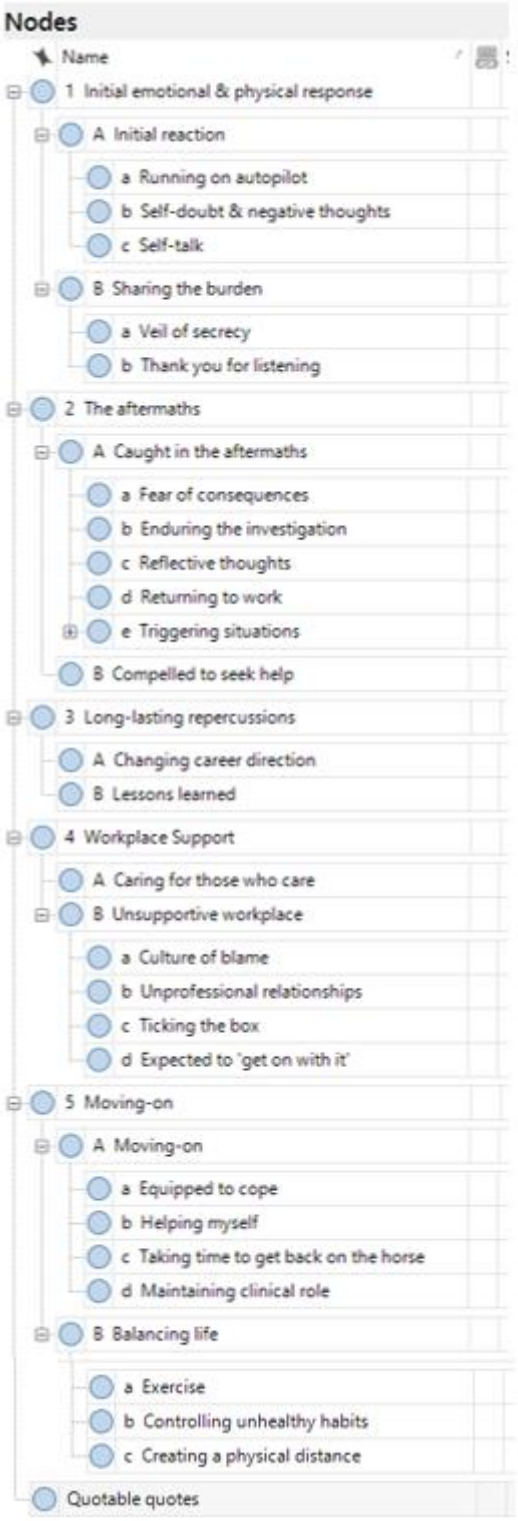
Researcher's signature _____ Date _____

Appendix L NVivo first cycle codes

Nodes

Name	Sources	References
Balancing life	13	43
Changing professional roles	4	9
Circumventing triggers	4	8
Compelled to seek help	6	19
Coping strategies	0	0
Creating space	16	57
Culture of blame	5	7
Emotional & physical response	20	115
Enduring investigation	7	8
Equipped to cope	12	18
Exercise	10	12
Expected to cope	9	15
Fear of consequences	3	6
Focus on something else	3	5
Getting back on the horse	2	5
Having faith	2	2
Helping myself	2	9
Lessons learned	18	75
Letting time pass	3	5
Living with the impact	20	102
Long-lasting repercussions	6	24
Maintaining clinical role	6	13
Moving-on	8	16
Professional relationships	8	19
Quotable quotes	20	156
Reflective thoughts	14	31
Remaining silent	7	23
Returning to work	9	15
Running on autopilot	6	10
Seeking follow-up	4	9
Self-doubt & negative thoughts	11	28
Self-talk	6	8
Sharing the burden	20	90
Supportive workplace	11	20
Taking leave	6	10
Taking time to breathe	2	2
Thank you for listening	4	4
This is nursing and midwifery	6	14
Ticking a box	4	11
Triggering situations	15	44
Unhealthy habits	3	6
Unsupportive workplace	5	13
Workplace bullying	3	4

Appendix M NVivo second cycle codes



Appendix N HREC approval letter

From: Research Ethics <research.ethics@ecu.edu.au>
Sent: Friday, May 26, 2017 10:08
To: [redacted]
Cc: Bev EWENS; Nick GIBSON; Jennie SHARP; Research Assessments; Bev LURIE
Subject: Project 17398 BUHLMANN Ethics Approval

Dear Melanie

Project Number: 17398 BUHLMANN
Project Name: Moving on after critical incidents in health care. Second victims: A qualitative study of the experiences of nurses and midwives

Student Number: [redacted]

The ECU Human Research Ethics Committee (HREC) has reviewed your application and has granted ethics approval for your research project. In granting approval, the HREC has determined that the research project meets the requirements of the *National Statement on Ethical Conduct in Human Research*.

The approval period is from 26 May 2017 to 31 December 2018.

The Research Assessments Team has been informed and they will issue formal confirmation of candidature (providing research proposal has been approved). Please note that the submission and approval of your research proposal is a separate process to obtaining ethics approval and that no recruitment of participants and/or data collection can commence until formal notification of both ethics approval and approval of your research proposal has been received.

All research projects are approved subject to general conditions of approval. Please see the attached document for details of these conditions, which include monitoring requirements, changes to the project and extension of ethics approval.

Please feel free to contact me if you require any further information.

Kind regards

Rowe

Rowe Oakes
Ethics Support Officer
Office of Research & Innovation, Edith Cowan University
Phone: +61 08 6304 2943
Email: research.ethics@ecu.edu.au
www.ecu.edu.au/research | facebook.com/research.ecu

From: Research Ethics <research.ethics@ecu.edu.au>
Sent: Tuesday, December 4, 2018 11:31
To: Melanie BUHLMANN
Cc: Bev EWENS; Amineh RASHIDI
Subject: RE: Project 17398 BUHLMANN Extension of Ethics Approval

Hi Melanie

Project Number: 17398 BUHLMANN
Project Name: Moving on after critical incidents in health care. Second victims: A qualitative study of the experiences of nurses and midwives

Thank you for your email.

Your request for an extension of ethics approval for this project has been granted until 30 June 2019.

Kind regards

Rowe

Rowe Oakes
Ethics Support Officer
Office of Research & Innovation, Edith Cowan University
Phone: +61 08 6304 2943
Email: [research.ethics@ecu.edu.au]research.ethics@ecu.edu.au
[www.ecu.edu.au/research]www.ecu.edu.au/research | [facebook.com/research.ecu]facebook.com/research.ecu

Appendix O HREC risk assessment extract

7.4 RISK ASSESSMENT			
The level of potential risk associated with this research project.			
LIKELIHOOD		***CONSEQUENCE***	
RARE *May only occur in exceptional circumstances*	☐	***INSIGNIFICANT*** *No injuries. Little or no impact on participants.*	☐
UNLIKELY *Could occur at some time*	☒	***MINOR*** *First aid treatment and/or counselling required.*	☒
POSSIBLE *Might occur at some time*	☐	***SERIOUS*** *Medical treatment required.*	☐
LIKELY *Will probably occur in most circumstances*	☐	***DISASTEROUS*** *Death or extensive injuries.*	☐
ALMOST CERTAIN *Expected to occur in most circumstances*	☐	***CATASTROPHIC*** *Multiple deaths or severe permanent injuries.*	☐

LIKELIHOOD Rating	**2**	**CONSEQUENCE Rating**	**2**

NOTE: **FOR MORE INFORMATION, PLEASE REFER TO THE INFORMATION AVAILABLE ON THE RISK AND ASSURANCE**
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SERVICES WEB PAGE:
http://intranet.ecu.edu.au/staff/centres/risk-and-assurance-services/risk-management/risk-management-tools-and-templates

		CONSEQUENCES 'C'				
		Insignificant	Minor	Serious	Disastrous	Catastrophic
LIKELIHOOD 'L'	Risk Rating L x C	1	2	3	4	5
Rare	1	1 (Low)	2 (Low)	3 (Low)	4 (Low)	5 (Moderate)
Unlikely	2	2 (Low)	4 (Low)	6 (Moderate)	8 (Moderate)	10 (Substantial)
Possible	3	3 (Low)	6 (Moderate)	9 (Moderate)	12 (Substantial)	15 (High)
Likely	4	4 (Low)	8 (Moderate)	12 (Substantial)	16 (High)	20 (Extreme)
Almost Certain	5	5 (Moderate)	10 (Substantial)	15 (High)	20 (Extreme)	25 (Extreme)

Appendix P Themes and sub-themes

Theme	Sub themes
Theme 1: **Initial emotional and physical response**	Initial reaction - Running on autopilot - Self-doubt and negative thoughts - Self-talk Sharing the burden - Veil of secrecy - Being heard
Theme 2: **The aftermath**	Caught in the aftermath - Fear of consequences - Enduring the investigation - Rumination - Returning to work - Triggering situations Compelled to seek help
Theme 3: **Long-lasting repercussions**	Changing career direction Lessons learned
Theme 4: **Workplace support**	Caring for those who care Unsupportive workplace - Culture of blame - Unprofessional relationships - Ticking the box - Expected to "get on with it'
Theme 5: **Moving-on**	Moving-on - Equipped to cope - Helping myself - Taking time to get back on the horse - Maintaining clinical role Balancing life - Exercise - Controlling unhealthy habits - Creating a physical distance